THE IRON AGE

THURSDAY, APRIL 3, 1890.

Novel Design for the Chicago World's Fair.

A most striking design for the World's Fair building in Chicago has been prepared by Architect E. S. Jenison, of 151 Monroe street. Mr. Jenison believes it will be feasible to put all the exhibits in one enormous inclosure. He proposes to build a huge tent, of iron and steel and stone, with glass roof. A central steel tower, 66 feet in diameter and 1100 feet high is to be built. This will contain eight elevators. From its top steel cables will be stretched to the circular side walls, which will be 1500 feet from the base of the tower. Upon these cables the glass roof will rest. This will give an enormous circular building 3000 feet in diameter, which, with the ground floor and two circular galleries 75 feet wide running around the building, will provide 193¾ acres of available space. By the aid of electric lights this enormous space would present magnificent vistas. Mr. Jenison asserts the practicability of such a structure. A reference to the Brooklyn Bridge gives a comparison. That has a span of 1560 feet, while the cables of this building will be 1500 feet long. The bridge will support a moving load of 100 pounds per square foot, while here there will be only 10 pounds plus the wind pressure.

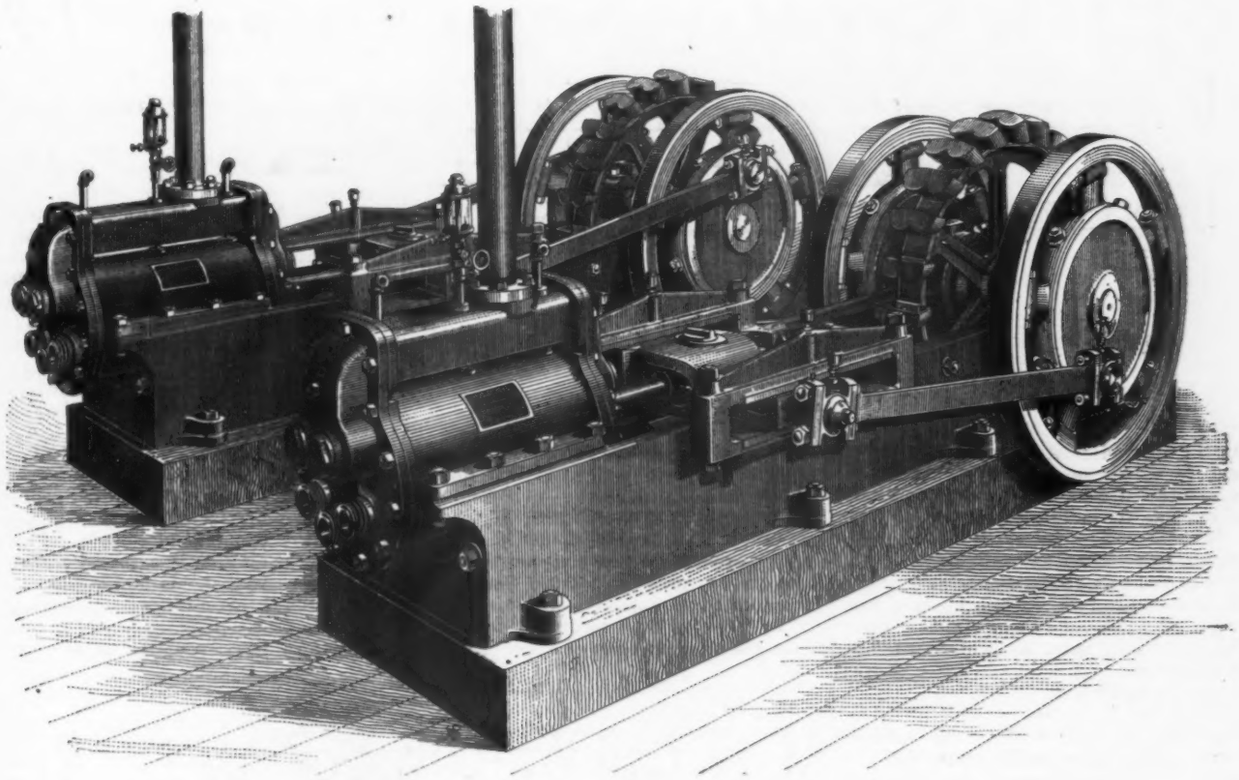
This latter point has been carefully considered. A round surface will offer less resistance than any other, and the wind pressure can be successfully sustained by carefully adjusted tension rods. The tower might be extended 500 feet above the roof, making it one-eighth of a mile higher than the Eiffel tower, and providing a considerable revenue from the elevators. The cost is estimated at $5,865,000, or $36,204 per acre. The Paris Exhibition machinery hall cost $75,080 per acre, the main building at Philadelphia $73,591 per acre, and the London Crystal Palace, $42,500 per acre. Of this cost about $1,000,000 could be realized from the use of the old material. The exhibits could be arranged in converging lines toward a grand amphitheater around the central pole. Mr. Jenison proposes also a large circular canal around the inside of the building for various purposes. This is certainly the most captivating of all the novel projects yet proposed in connection with the exposition.

London Mining and Metals Exhibition. — An international exhibition of mining and metallurgy will be held during next summer at the Crystal Palace, Sydenham. It has received most encouraging and widespread support. The scope of the exhibition will be sufficiently wide to enable a most valuable and interesting display to be made. The exhibition will open on July 2 and close on September 30, 1890, and, besides several features of special attraction, important collections of exhibits are expected from the colonies and foreign countries. The honorary secretary is Mr. George A. Ferguson, editor of the *Mining Journal*, 18 Finch Lane, London, E. C., from whom prospectuses and application forms for space may be obtained.

The steamship lines plying between European ports and South America find that the business is less profitable than it was a year ago, owing to the lack of return freights. The Hamburg South American Steamship Company report total profits in 1889 of only 1,780,619 marks, compared with 1,890,578 marks in 1888. The prospective abundant harvests in the Argentine Republic and Brazil encourage the hope of improvement.

Air-Compressor Operated by Pelton Wheel.

The transmission of power by compressed-air is awakening a new interest in railway work and for local distribution of power as shown in the success of the Popp system in Paris and in Birmingham, England. A street railway is now being constructed in Washington, D. C., to be operated by compressed-air by transmission. Inquiry is coming from the Western States for air plants for street railways, and inventors are taking a lively turn at new devices for its application. There is but little doubt that in a very few years compressed-air will stand in the front rank as a medium of transmission of power; while its hygienic nature recommends it as against all competitors.



AIR COMPRESSOR OPERATED BY PELTON WATER WHEELS.

The loss of energy by air-transmission for long distances is in striking contrast with steam or even electricity. Five to 10 miles distance are practical possibilities with a loss of small extent. The underground distribution of power in our cities by this means will become a source of comfort and freedom from the defects of the steam system, that should alone recommend it as the basis upon which future power distribution can rely.

The use of compressed air in mines for operating rock drills, coal-cutters' pumps, hoisting machines and for serving at the same time as an efficient medium for ventilation, has increased apace with our vastly increasing mining industry. It has largely contributed to the success of deep mining and in excavating the great tunnels of modern times. The increasing demand for air-compressing appliances has stimulated manufacturers to meet every want and condition of power for such purposes.

We illustrate one of the latest arrangements of air-compressors for a South American mining company, whose mines are located in the heart of the Andes of Peru; designed and made by the Ingersoll-Sergeant Rock Drill Company, of New York, consisting of a pair of sectionalized air-compressors with cylinders 10 inch diameter, 18 inch stroke, with water jackets for keeping the cylinders cool by external water circulation. The bed frames and fly wheels are so divided that no single piece weighs over 300 pounds and is suitable for mule back transportation.

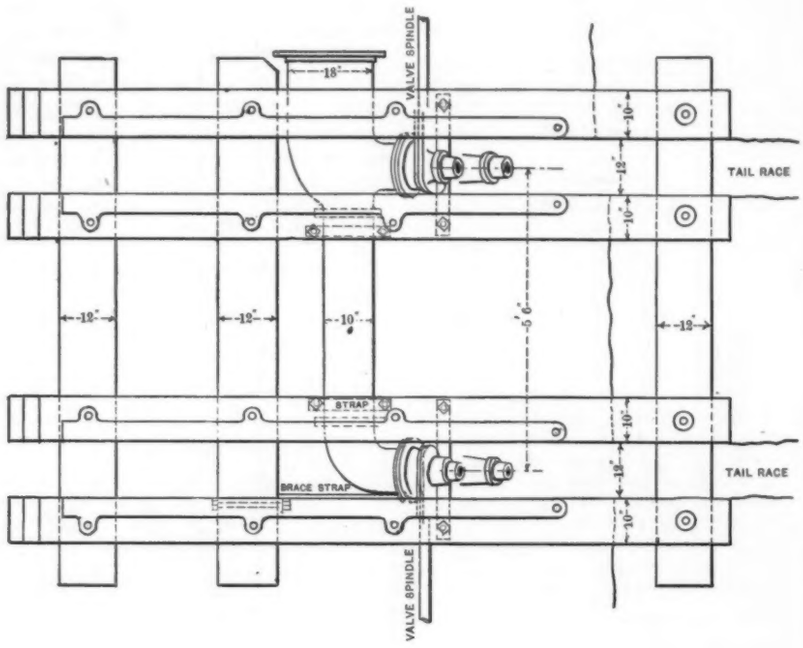


Fig. 2.—Plan Showing Arrangement of Nozzles.

The actuating power is a mountain stream, from which an available fall of 56 feet is obtained at a distance of 200 feet from the compressor. The water is conveyed through an 18-inch spiral riveted tube 200 feet long, to which the four nozzles under the wheels are fixed. The water is applied to each of the Pelton water wheels, which are 4 feet in diameter, by double nozzles, with a single gate for each wheel, as shown in Figs. 2 and 3, thereby doubling the power of the wheel by the double flow of water. The spouting velocity of the water under the above head is about 3500 feet per minute, yielding about 26 horse-power for each compressor at 120 revolutions per minute, using 550 cubic feet of water per minute, for which the stream is sufficient.

The great elevation of the mine is a desideratum in proportioning the compressors for a specified amount of work—or for running a given number of rock drills—these compressors being equal to supplying air at 60 pounds pressure, at an elevation of 10,000 feet above the sea. The advantage gained by placing the Pelton wheel upon the compressor shaft is a considerable item of economy in power and first cost for low heads and limited quantities of water.

The readiness with which a compressor and its operating power may be set up for work in the mountain mining districts, as illustrated in this plan, will be not only much appreciated in the decreased freight and mule carriage, but the work of setting two machines and the maintenance of belt connections with its loss of power are matters of the greatest importance at mines where every pound of water must be made to do its utmost duty for all purposes.

The Cameron Coal and Iron Company.

The plan for the reorganization of the Cameron Iron and Coal Company provides for the retirement and cancellation of all outstanding bonds, stock and indebtedness of the company, as follows: $1,150,000, 6 per cent. first mortgage bonds, with interest to September 1, 1890; $350,000 secured and unsecured debts; $3,000,000 common stock—total, $4,500,000. In lieu of these new securities are to be issued as follows: $500,000, 5 per cent. mortgages 50-year gold bonds, dated September 1, 1890; $1,500,000, 5 per cent. preferred stock, non-cumulative; $1,500,000 common stock, to receive 5 per cent. dividends after payment of 5 per cent. on preferred stock—total, $3,500,000. The preferred stock is to control the new company for the first three years, after which control is to revert to all the stock. The new securities are to be applied as follows: $200,000 bonds to be held in the treasury for future purposes of the company; $300,000 bonds to be given at 90 per cent. to present stockholders who elect to pay $9 per share subscription; $1,200,000 preferred stock to present bondholders and $300,000 to creditors. The whole of the common stock, $1,500,000, to be given to present stockholders on payment of an assessment of $2.50 on the subscription of $9 per share, in the proportion of 50 per cent. of their present holdings at par. Present stockholders are to elect, at the time of depositing their stock, whether they will pay $2.50 per share assessment or a subscription of $9 per share. If they pay the former they will be entitled to 50 per cent. at par of present holdings in new common stock; if they pay $9 per share they shall receive a like amount of new common stock and $10 of the new first mortgage bonds at 90 per cent. for the amount of their subscription at $9 per share. Under the agreement the security holders and creditors give the committee full power to carry out the plan in all respects; also, to deposit their securities and claims with the Central Trust Company, receiving therefore negotiable certificates. Security holders and creditors will be required to deposite their securities, or file their claims, under the conditions prescribed and within the time specified, in order to be entitled to avail themselves of the benefits.

Substantial progress is being made in building up the town of Harvey, the new industrial suburb of Chicago, which is being started under the auspices of the American Steel Car Company. Two other large manufactories have within a few days decided to locate there and the sale of the land to them has been closed. One is the Grinnell Agricultural Implement Company. This company have been searching for a location since the first of the year. They have been reported as buying sites at various places, among others a 40-acre tract at Washington Heights. None of those deals evidently were completed, for it is now definitely stated that the company have purchased a site for their factory in Harvey, just south of where the steel car works are to be erected. The works will employ some four or five hundred people. In the town of Harvey the plan of prohibiting the opening of saloons will be followed, the same as is enforced at Pullman. It is said that this fact is what influenced the Grinnell Implement Company to locate on the Harvey tract. They come from a town where prohibition has been enforced and they like the effect. The other institution that is to locate at Harvey is the wagon and carriage manufactory of Cramer, Steel & Austin. This company will immediately put up large wagon-shops on a site just west of that secured by the Grinnell Implement Company. This company now have orders ahead for 3000 wagons. They will build a factory from which they expect to turn out 10,000 wagons a year, besides a large number of carriages and light vehicles.

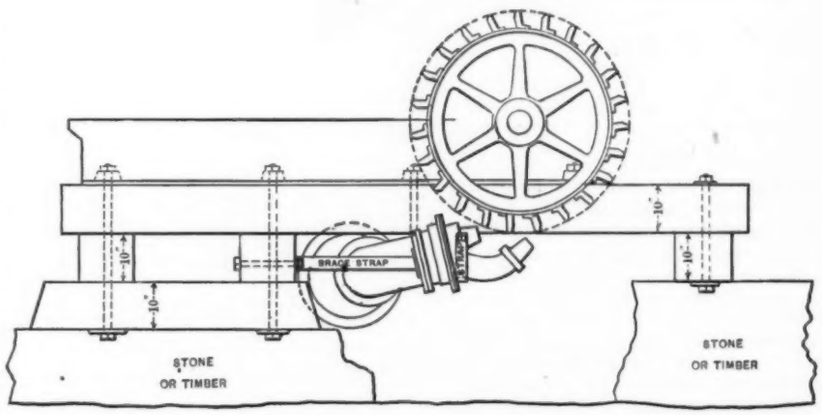


Fig. 3.—Elevation through Wheel and Nozzles.

Agricultural Depression.

Brief extracts have already been made of Statistician Dodge's report, to which we add the following:

AGRICULTURAL DEPRESSION AND ITS CAUSES.

There is almost universal complaint among farmers of all nations of the prevalence of low prices. The agricultural depression of Great Britain has probably been more severe than that of any other nation. A potent cause in this case is the competition from all parts of the world unrelieved by any taxation of imports. France and Germany are somewhat disturbed by similar complaints of unremunerative rural industry. Italy has also had occasion to make official investigation of the causes of agricultural depression. Other countries are vocal with similar cries of dissatisfaction with the proceeds of agricultural labor. So the trouble appears to be general in monarchies and republics, whether the monetary circulation is gold or silver or paper, and under the influence of various and diverse economic systems.

Not all countries are in the same depths of distress. In ours, farmers and farm laborers are doubtless better fed and clothed, able to maintain a higher style of living, and enjoy more of the benefits of civilization and culture than those of any other country. It may be said with absolute truth that in 30 years the scale of living has advanced immensely in this country, not equally in all sections, but manifestly everywhere. There is a tendency to extravagance in town life that has been imitated in rural circles, and the ambition for progress and precedence, when generally aroused, will express itself in dissatisfaction with prevailing conditions and determination to overpower all obstacles to advancement. This is a hopeful sign. It is an indication of conscious dignity. It is a prophecy of progress

While, therefore, our own country feels the effect of agricultural depression less than almost any other in the world, the reduction in prices of most staples, and in domestic animals and their products, forces a disagreeable comparison with agricultural values at their highest, compels reduced expenditure to keep outgo subordinate to income, increases the number of unfortunates who cannot make "both ends meet," and reduces the profits of the enterprising and skillful who are still able to strike a balance in their favor. Retrenchment is not an agreeable alternative, and is therefore delayed until its compulsion is imperative and perhaps destructive. "The times" are universally regarded as "hard" in comparison with more prosperous eras of the past.

It matters not that the prices of implements, utensils and fabrics, of goods desired by the farmer, have been reduced proportionately; his interest account, if he has one, is unreduced, and his mortgage is a greater burden to lift. He naturally resents and deplores low valuation of farm products. What are the causes of low prices? They may be various, but the prime cause is the operation of the inexorable law of supply and demand. Abundance leads inevitably to low prices; scarcity to high prices. With either there is fluctuation, a see-saw of prices which increases cost and reduces profit. Medium and uniform values are therefore best for the farmer.

PRODUCTION AND POPULATION.

There has been an increase of production in this country even more rapid than the increment of population. America has long been the synonym of plethora. Her people probably consume more than those of any other nation, and have a larger surplus for foreign needs. Immigration has been heavy and unrestricted; railroad building has been stimulated until an empire of new and productive lands has been opened; and these lands have been given *ad libitum* to settlers of native or foreign birth. Speculation first, and profitable utilization afterward, have been the motive for settlement and development which have astonished the world and caused overproduction and low prices. The following statement shows the increase in 30 years in certain products of the farm, as reported by the census:

Products.	1849. Bushels.	1859. Bushels.
Corn	592,071,104	838,792,742
Wheat	100,485,944	173,104,924
Oats	146,584,179	172,643,185
Potatoes	65,797,890	111,148,867
	Bales.	Bales.
Cotton	2,469,093	5,387,052
	Tons.	Tons.
Hay	13,838,642	19,083,896

Products.	1869. Bushels.	1879. Bushels.
Corn	760,944,549	1,754,591,676
Wheat	287,745,626	459,483,107
Oats	282,107,157	407,858,999
Potatoes	143,337,473	169,458,539
	Bales.	Bales.
Cotton	3,011,996	5,755,359
	Tons.	Tons.
Hay	27,316,048	35,150,711

If we extend the comparison to the present date, we find that the corn crop exceeds 2,000,000,000, wheat approximates 500,000,000, oats exceed 700,000,000, and hay and potatoes have increased in similar proportion. While the product may be three or four times as large, the population is less than three times as much, though the proportion of workers engaged in agriculture was larger than now.

THE COTTON CROP.

During the 40 years from 1850 to the present time the cotton product increased from a little over 2,000,000 bales to more than 7,000,000 bales Cattle have also increased very rapidly; cows from between 6,000,000 and 7,000,000 to about 16,000,000; other cattle from scarcely 12,000,000 to more than 36,000,000. While sheep have doubled in numbers, the wool production have quadrupled. While the milch cows are almost three times as many, their average rate of yield of milk has probably doubled. The improvement of other cattle, through breeding and feeding, has reduced the time required for maturity and increased the weight of carcass to such an extent that the amount of beef produced annually in proportion to numbers of animals kept is immensely increased. Relative numbers, in comparison with the past, in all kinds of domestic animals, have far less significance than improvement in weight and quality, in thriftiness and early maturity.

It is difficult to force a market abroad for a surplus of any product. Every nation is seeking to produce its own food, and, as far as possible its raw materials for extension in all forms of industrial production. The instinct of self-preservation compels the adoption of such a policy. This furnishes the motive for the corn laws of France and Germany and other Continental countries, and the laws of European nations prohibiting the introduction of our pork products. We cannot sell our crops abroad, as a rule, except to fill the gaps in supply that are made by bad seasons or other results of the inevitable or inexorable.

In cotton, this country enjoys an acknowledged superiority, and will doubtless continue to hold it. It supplies to the cotton factories of the world more than half their material. It can increase this supply, with the inevitable effect of reducing the price. The sale does not depend on our purchases abroad. Its aggregate would not be reduced a pound if we should refuse to spend a single dollar for foreign products. The mills must have the fiber, and nowhere else can it be had of so good quality and value. We can manufacture more of it here, and thus increase foreign competition for it, but the product cannot be enlarged beyond the current wants of the world's trade without reducing the price of the fiber and fabric. Thus, the law of supply and demand limits the extension of cotton fields.

In wheat overproduction has destroyed the grower's profit. Wheat growing has become a philanthropic mission for supplying cheap bread to Great Britain and encouraging here manufacturers to keep wages on a low plane. The Northwestern missionaries are still diligently sowing their seed and floating their bread across the waters, and mourning that the profits do not return to them after many days of weary transportation. The area of the crop of 1889 included about 10,000,000 acres more than the home consumption of the year will require; and the price in Liverpool has of late been the lowest for a century.

We cannot force foreigners to buy our bread. There has been a mass of ineffable nonsense regarding "the markets of the world" for wheat. Less than a fourth of the people of the world eat wheat half of the people of Europe scarcely know its taste, while few of the nations of Asia and Africa have any knowledge of it.

DECLINE IN LIVE STOCK VALUES.

The production of meat has also advanced faster than population. In 1880 the cattle of all kinds were returned as 39,675,533, and the numbers as now estimated, on farms and ranches, are 52,801,907, or 33 per cent. more. Excluding cows, the increase of other cattle, which includes the beeves, is equivalent to about 40 per cent. Then beeves are brought to maturity more rapidly than formerly, and more meat is made in proportion to numbers, so that the beef supply is greater than in 1880 in proportion to population. The ratio of supply has been very greatly increased since 1850. Our export of beef has grown up in the past 13 years, and the export of cattle has not only increased, but its character has changed from the shipment of Texas or Florida long horns to Cuba to the export of fat beeves to Europe, one of which commands the price of five of the original style of gulf coast cattle. This difference represents not precisely the meat-making capacity of the cattle of 1850 and 1890 respectively, but it suggests the wide disparity between the ratio of meat to numbers of cattle at the two dates.

(To be continued.)

A "Directory of Directors" is published in London, and its last issue has the names of 12,500 noblemen and gentlemen who may be called professional directors, being paid in different amounts for their time, but particularly for the use of their names as managers, directors and promoters of companies incorporated for all sorts of purposes, for operating in all parts of the world, and of varying degrees of financial success. As the same directors appear as interested in different companies, the *Railway News* thinks that at least 25,000 companies are represented in the list mentioned. A small average payment of $500 per year for each company makes a total of $12,500,000 for the use of names of professional directors in England, and this by no means equals the probable sum paid.

A. Fulton's Son & Co., of Pittsburgh, shipped a church bell to Wheeling, W. Va., last week that weighed 2675 pounds. It is the largest bell ever cast in Pittsburgh. The above firm have recently been reorganized and have concluded to enter more largely into the casting of bells of large size for churches, schools, factories, &c.

The Gesner Rust-Proof Process.

For some time past, G. W. Gesner has been experimenting with a process for giving articles of iron and steel a rust-proof coating. A plant has been established at South Brooklyn, which has been in operation for some time past. The accompanying engravings shows its construction. It consists substantially of a bench of two ordinary gas retorts placed side by side in a furnace heated by a grate. The process itself is conducted in the following manner: The retort being carried to a temperature of 1000° to 1200° F., as may be determined by the character of the articles to be treated. The latter are introduced by means of a crane and pulley, care being taken that they do not touch one another. After closing and testing the retort, the heating continues for about 20 minutes. Then steam is introduced into what Mr. Gesner calls a hydrogen generator, shown in the drawings in Figs. 1 and 3. It is a simple pipe, open at the rear end. Mr. Gesner claims that in the passage of the steam through this generator hydrogen is generated, which fills the retort. This operation goes on for 35 minutes, at the end of which time half a pint of naphtha is permitted to flow into the retort for ten minutes. The flow of hydro-carbon is then stopped, and the steam which has been allowed to enter the "generator" during the whole operation is continued for 15 minutes longer. The whole time employed in the operation is therefore one hour and 20 minutes. The "purging pipe," which dips into an open vessel of water, as shown in Fig. 1, to the depth of 1½ inches, carries off any excess of gases produced in the operation.

In cases where articles treated are ornamental, such as art hardware, they are given a bath of cold whale oil or paraffine oil to render them more even in tone. In other articles no oil is used. The plant now established at South Brooklyn is rated at a capacity of 6 tons per day of boiler tubes, 7½ feet in length, or 2 tons of ornamental hardware, the rate of production of treated goods depending upon the time required for handling them. The average cost of fuel per day is reported by Mr. Gesner to be $1.75, including coal for the boiler.

To substantiate his claim that hydrogen has a function in the creation of a rust-proof coating, Mr. Gesner quotes the fol lowing analysis, made by Stillman & Gladding, of this city, of a sample of the surface of cast iron prepared by the process: Carbon, 1.01 per cent.; hydrogen, 0.22 per cent.; sand, 6.70 per cent., and iron, 66.10 per cent. The chemists add that the iron is present as metallic iron and as oxides of various constitution.

In order to determine whether the treatment had any adverse effect upon the strength and resistance of wrought iron and steel suitable for boiler, ship and bridge purposes, a series of tests were made by B. H. Coffin, in charge of the testing department of Henry Warden, Germantown Junction, Philadelphia, Pa. We quote as follows from this report, the test showing these results:

Iron:	Elongation. Pr. cent.	Reduction of area.	Elastic limit.	Ultimate stress.
Untreated.	10.5	12.9	32,350	45,040
	10.1	11.6	33,750	44,880
Treated...	8.4	13.4	33,740	42,620
	6.6	11.6	33,640	45,770
Steel:				
Untreated.	21.6	43.3	41,960	58,250
	19.1	42.8	43,050	59,120
Treated...	24.1	40.9	39,050	55,880
	26.0	44.9	37,390	55,220

"Five test pieces of iron were cut from a single plate ½ inch thick, and five more similarly from a ⅝-inch steel plate. These were machined to suitable sizes for the standard 8-inch test piece, giving a section of about 0.71 square inch for the iron and 0.51 square inch for the steel. Three of each of these sets were forwarded to Dr. Gesner for treatment, who retained one and returned the remainder. The tests were made with a 200,000 pound Olsen machine, and the measurements with Brown & Sharp's micrometer gauges, and are believed to be accurate.

"The pieces were gauged both before and after treatment and showed no change. The tests show practically no effect whatever upon the iron, with the exception of a slight decrease in the elongation. As the reduction of area is not reduced, it would be impossible without further evidence to say whether or no the ductility were affected. At any rate the ductility being so low, this small reduction if proved to exist, would be of comparative unimportance in affecting the value of the metal. The steel is benefited. The annealing undergone during the treatment has softened it to some extent; it has lost about 5 per cent. in strength but gained 5 per cent. in elongation. This metal as originally would not have come up to specifications, being insufficient in stretch. The treatment has not reduced the tensile strength below the assigned limit; at the same time it has brought the elongation up to requirements. Pieces of both iron and steel were bent cold to an angle of 45° without showing any fracture or scaling of the treated surface."

A large variety of iron and steel goods have been already treated in quantities by the South Brooklyn Rust Proof Iron and Steel Works, among them being builders' and art hardware, roofing shingles, stove

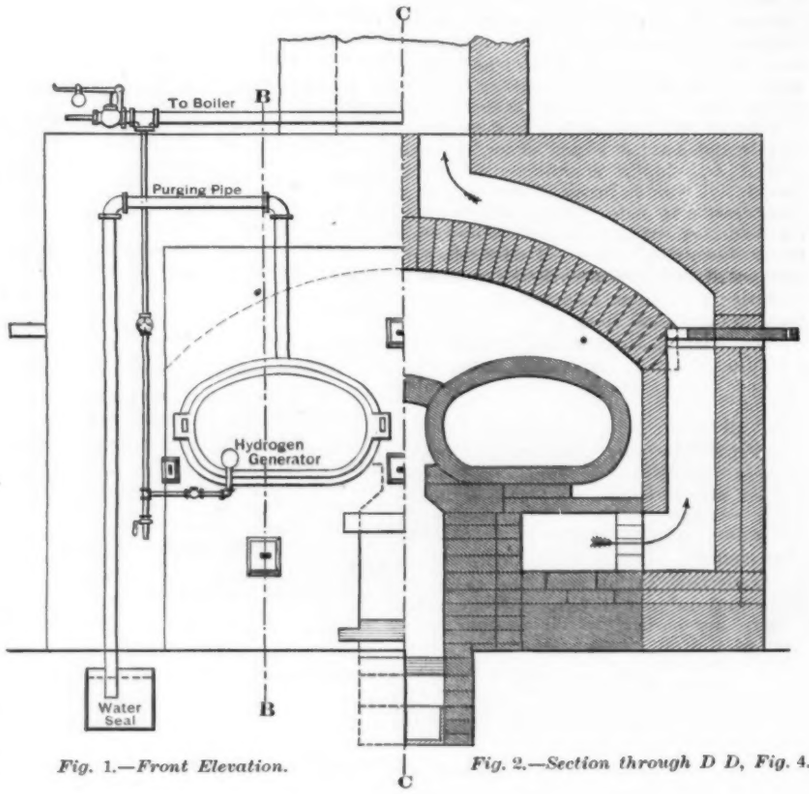


Fig. 1.—Front Elevation. *Fig. 2.—Section through D D, Fig. 4.*

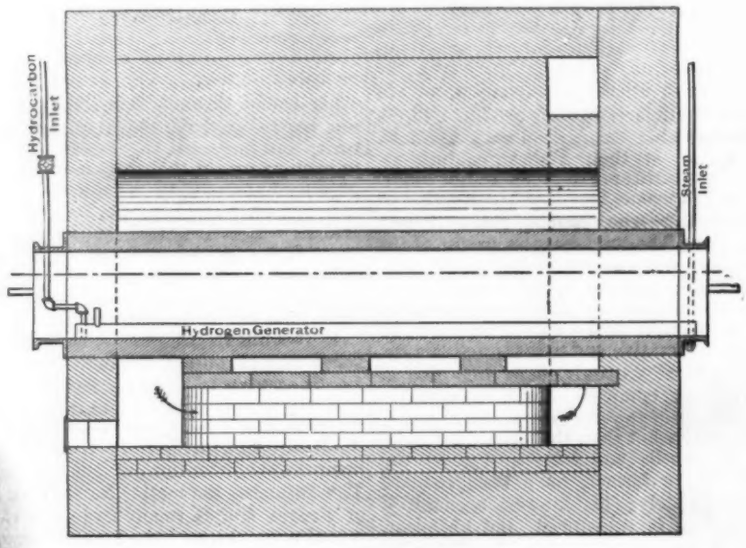


Fig. 3.—Section through B B, Fig. 1.

THE GESNER FURNACE.

fittings, pipe and pipe fittings, parts of water meters, steam radiators, pistols and other articles. The color produced is a dark blue.

Trade on the Lakes.

Vessel owners on the lakes are looking for an unusually prosperous year, as there are larger amounts of iron ore already waiting to be shipped, and larger amounts of tonnage already chartered than ever before. One of the largest shippers in Chicago, on being questioned, said: "It is reported that 6,000,000 tons and even more are already chartered for iron ore, which is nearly equal to the total output of last year. As for grain, that is problematical, but it will probably be shipped in greater quantities than ever before in the history of the country." The amount of tonnage chartered is variously reported, as there is a tendency toward an attempt to keep the exact figures quiet. The amount of iron ore waiting to be moved was put in some places as high as 10,000,000 tons as compared with about 7,000,000 tons last year. For the first trip about 70 per cent. of the total tonnage of Chicago for ore is already taken and about 80 per cent. of the total tonnage for grain. To increase the supply of tonnage to a figure commensurate with this increase in the demand for it, the shipyards in Buffalo, Cleveland, Detroit, Bay City and Manitowoc have been busy all winter, and have more orders ahead than they can fill in two years. Captain John Prindiville considers the outlook in general better than for years. He said: "There is at least 60,000 or 70,000 new tonnage coming out this spring, and as so much is already chartered for the season, it will all be needed. Outside vessels usually get lower rates for transient cargoes, but it may be that they will get higher rates this year than the chartered tonnage." The amount of available tonnage will also be increased about a third by the large supplies of coal already on hand.

Another said: "The open winter leaves the yards full of coal, so that the supply on hand is already about equal to the probable demand. This will enable the vessels that take iron ore down to Lake Erie ports to return light, thus saving two days usually taken up for loading coal and making quicker time. Iron ore is king now, as the mines are not on the trunk lines. Rates for iron are better than for the last few years, being about $1.10 from Escanaba, $1.20 from Ashland, and up to $1.40 from farther Lake Superior ports to Lake Erie harbors on charters for the season.

These rates, in general, are about 15 or 20 cents higher than they were 12 months ago. If ore keeps on as it has opened, and as appearances tend to show it will, with the amount of grain in sight, there is no reason that can at present be suggested to prevent a remarkbly prosperous season on the great lakes.

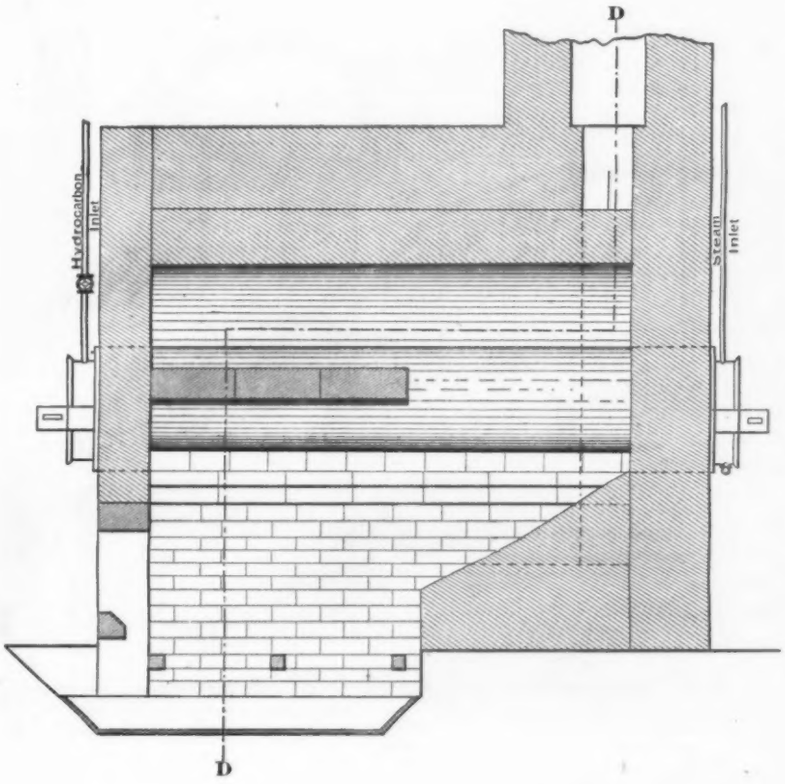


Fig. 4.—Section through C C, Fig. 1.

THE GESNER FURNACE.

From the Duluth correspondent of St. Paul *Pioneer Press* we make the following extract:

"The prospects for the coming lake navigation season are unusually bright for vesselmen, who are assured of all they can do from the opening to the close. From present prospects Duluth will not see its first boat from the lower lakes much, if any, before April 25. It may not be until May 1, as the ice in the Sault canal is reported quite heavy. The new tonnage of the season will be quite large—probably 60,000 tons—but the effects on rates will be made up by the increased ore mined. The grain situation is much better than a year ago.

The stock of grain on hand at the opening of navigation last year was only 3,300,000 bushels. At the present time there is a total of 6,550,000 bushels. The coal transportation will be much larger this year than last, vesselmen and coalmen estimating the total receipts at Duluth and Superior for the season at 1,500,000 tons, or about 350,000 more than in 1889.

CORRESPONDENCE.

The Direct Bessemer Process in Sweden.

To the Editor: Having read your interesting account in *The Iron Age* of the 27th of the Bessemer process at Nischnje-Saldinsk, I beg leave to make a few remarks and say that, when we know with what skill and precision the direct pneumatic process is making in Sweden, it is somewhat of a surprise to learn that our friends in the Oural Mountains have not tried to profit from the experience of their neighbors, instead of going to work in such a roundabout way as recorded by Dr. Müller. In regard to the temperature of the iron, I can state, from several years' experience of my own, that there is no difficulty in obtaining the iron sufficiently hot in the Swedish charcoal furnaces, many of which are much smaller than the one operated at Nischnje-Saldinsk. But, of course, the furnaces must be run so as to give the direct result—viz., high temperature of the blast, rapid driving, comparatively small burden of ore, and a properly basic character of the slag, between 2 RO, SiO^2 and RO, SiO^2, or sometimes even more basic steel. To my knowledge this is really the simplest way to obtain the iron of sufficient initial heat in the small charcoal furnaces. A temperature of 1300° to 1500° C. at a hight of from 6 to 7 feet above the tuyeres is not uncommon in them. The iron is tapped every six hours direct into a ladle and weighed before being poured into the converter. As a rule, about 1 per cent. of silicon is aimed at, but at some mills iron as low in silicon contents as 0.75 per cent. is worked regularly.

In regard to the most desirable per cent. of manganese in the iron for the direct process the opinions are somewhat divided. As the manganese is more difficult of oxidation than is the silicon, it follows that an unduly large per cent. of the former element, *per se* unnecessarily retards the conversion, and also persistently retains the carbon. The manganese oxide is more difficult of reduction than the fereous oxide. If, therefore, as is most likely the case, the oxidation in the Bessemer converter also takes place through the medium of the slag, and we bear in mind that the rapidity of the conversion depends on the facility with which the slag delivers its oxygen to the iron, it follows that the slag must be more or less oxidizing in proportion as more or less iron in it has been substituted by manganese. In cases where it is desired to produce high of carbon contents without recarbonizing, a certain amount of manganese in the iron may be desirable, as it makes the slag less oxidizing, and being more difficult of reduction than iron, indirectly protects the carbon. Some works in Sweden have used pig iron with as much as 3 to 4 per cent. of manganese; others use irons with hardly more than traces of this element.

Almost the very first experiments in Sweden with the direct process were successful, and the products from some have now for 30 years been unequaled by any steel except the more expensive brands of crucible steel made from Dannemora and Persbergs irons.

The following analyses may serve as an illustration of different materials for files:

Analyses of File Metal.

	Swedish Bessemer.	American crucible.	American cast iron file.
Carbon	1.25	1.30	0.70
Silicon	0.05	0.21	0.97
Manganese	0.12	0.25	0.04
Sulphur	trace	0.03	0.06
Phosphorus	0.03	0.07	0.25

Yours truly,
WM. MOLIN.

NEW YORK, March 31, 1890.

The Merchants' Bridge at St. Louis.

At an early day St. Louis will possess what its business men and the community have long striven for—a second bridge across the Mississippi River. For many years St. Louis merchants and manufacturers have been keenly alive to the fact that the development of the city as a commercial metropolis and a manufacturing center was hampered by the tribute exacted by the Gould interest for the transportation of goods and passengers from one bank of the river to the other by that famous structure, the Eads Bridge. The owners of the bridge have for years levied a heavy toll upon the community. The Eads bridge is required to pay through its traffic 7 per cent. on $6,000,000 bonds, 12 per cent. on $2,490,000 first preferred stock and 6 per cent. on $3,000,000 preferred stock, or fixed charges of $828,800 annually, to which are added $23,888 taxes. In 1888, according to official reports, the structure earned $1,703,300 gross, while the operating expense was $847,513, leaving net earnings of $855,787. The high charges have had the result that a large part of the freight destined for St. Louis itself, and of the freight shipped eastward from St. Louis, does not cross the river on the Eads Bridge, but by the transfer boats, car floats or ferry boats; nearly all the local freight destined for St. Louis is consigned to East St. Louis for that season. How large this volume of business is may be gathered from the following figures: In 1889 the total traffic over the Eads Bridge by cars was 3,286,876 tons, and by teams 621,739 tons. By boats, floats and ferries the tonnage was 3,339,499 tons. Of the total of 6,626,366 tons therefore 41 per cent. avoided the bridge. In addition to the freight traffic, there are transferred across the structure not less than 140,114 passenger express, mail and baggage cars. Even conceding that when it was built the Eads Bridge cost far more than a structure spanning the river could now be duplicated for, its bond and share capital of nearly $11,500,000 undoubtedly is inflated. Aside from motives inspired by public spirit, an effort to compete with an enterprise earning 5 per cent. on $17,000,000 was certainly to be regarded as a promising business undertaking. Accordingly, the Merchants' Exchange, of St. Louis, inaugurated the St. Louis Merchants' Bridge and its associate enterprise, the St. Louis Merchants' Bridge Terminal Company, to provide for cheap river transit and additional rail facilities. The committee who had charge of the undertaking were S. W. Cobb, ex-president of the Exchange, C. C. Rainwater, president of the Rainwater-Boogher Hat Company, John R. Holmes, John Whitaker, of Francis Whitaker & Sons, packers; D. R. Francis, of D. R. Francis & Bro. Commission Company, and John Perry, of the Standard Stamping Company. The first named is president, the second vice-president and the last named treasurer of the company, John H. Overall being secretary. A charter under the acts of Illinois was obtained May 11, 1886, and on February 3, 1887, an act of Congress authorized the construction of the bridge not less than two miles above or two miles below the Eads bridge. Later in the year a city ordinance authorized the building of railroad tracks on certain streets of the city. The Terminal Company is required to connect their tracks by switches and side tracks with any other railroad depot, warehouse, factory or commercial or manufacturing establishment located adjacent to the railroad, and is required to erect a passenger depot to cost not less than $200,000.

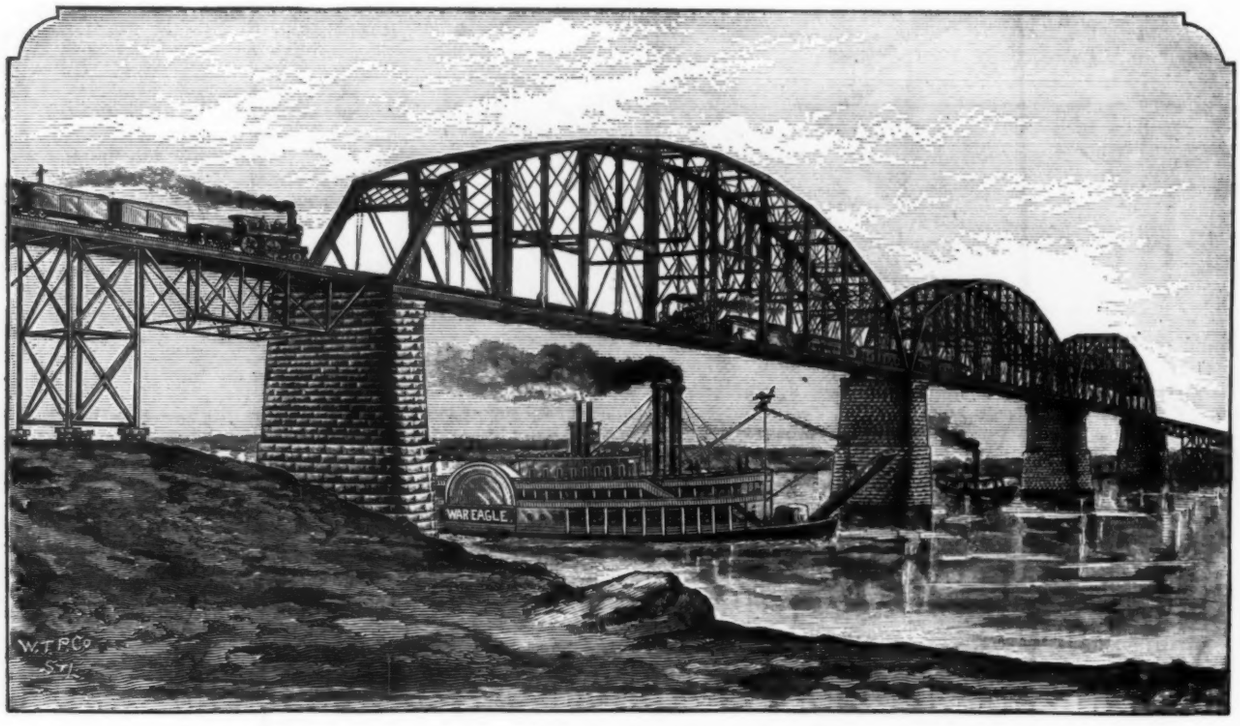
The capital stock of the Bridge company was increased from $500,000 to $2,000,000, on January 21, 1889, and on the 1st of February, 1889, the St. Louis Merchants' Bridge Company leased its structure for 40 years to the Terminal Company, the latter paying as rental, first, interest on the bonds of the Bridge company of the series, amounting to $2,000,000, provided that the amount of the bonds to be used did not exceed the sum of $1,500,000 before the 1st of June, 1890; second, all taxes, and third, three-fourths of the net income, which the Terminal Company may derive from the operation of the bridge, after deducting the amount of interest maturing.

Subsequently, the Terminal Railway Company increased their capital stock from $1,000,000 to $2,000,000.

THE BRIDGE.

The accompanying engraving shows the general features of the bridge, which consists of three main spans, respectively 521.5, 523.5 and 521.5 foot spans, six approach spans of 125 feet each, four braced piers of 25 feet each and two pier spaces of 3 feet each, making the total length 2,422.5 feet. The clearance above the St. Louis directrix is 54 feet 3 inches.

The contract for the main bridge and 425 feet of the steel approaches on each end was let to the Union Bridge Company of New York City, and the bridge proper is now completed, only a part of the approach work remaining to be finished. The work on both approaches, which has been mostly let to various contractors, and partly performed by the bridge and terminal companies themselves, will, no doubt, be entirely completed, and connections made with the Terminal Company's tracks on the west, and the tracks of several railroads on the east, by April 1, exclusive of the elevated structure, which will be completed by May 1, this year.



THE MERCHANTS' BRIDGE AT ST. LOUIS.

The contract for the double track elevated structure on the line of the Terminal Railway has been let to the Phœnix Bridge Company, of Philadelphia, Pa., who are now engaged in the execution of the contract. The terminal tracks have been laid from the Water Works to Biddle street, and it is expected that the elevated structure will be completed and all tracks laid and connections made with the St. Louis and San Erancisco Railroad and the Union Depot tracks by May 1, this year.

The general plan of the bridge, and its approaches and most of the details that were recommended by the engineers, Morison and Corthell, have been followed in the actual construction of the work. Examinations made of the rock during the building of the piers, when all material overlying it had been removed, showed

that in every case the piers rested on firm hard limestone rock. The rock, in every case, was leveled off, or stepped, for the iron cutting edge, and thoroughly cleaned of all loose shale, clay, sand, &c., and at least two holes were drilled five feet into it, to determine its character. The caissons were then solidly packed with concrete.

Limestone, from Bedford, Ind., was used to within 3 feet of the low water-line; above this level to the high water-line Missouri granite was used, and above this, Bedford limestone. The dimension stone was laid in Portland cement mortar, and the backing in Louisville cement.

In order to make a less abrupt break in the grade between the level grade of the bridge and that of the approaches, the two river piers were raised so that the clear hight in the center of the central span is 52 feet above high water instead of 50 feet, as required by the act of Congress, and the hight at the end of the shore spans is about 4 inches below this hight. This gives a much better bridge for navigation than the law contemplated.

On the west end of the bridge the approach crosses Ferry street twice. The crossing nearest the bridge is made by a viaduct resting on cylinder piers, the crossing furthest from the bridge is a deck span 125 feet long resting on masonry piers. There is one other street overhead crossing, which is made by masonry abutments and steel girders. The intermediate space between the structures are either solid earthwork or a substantial timber trestle.

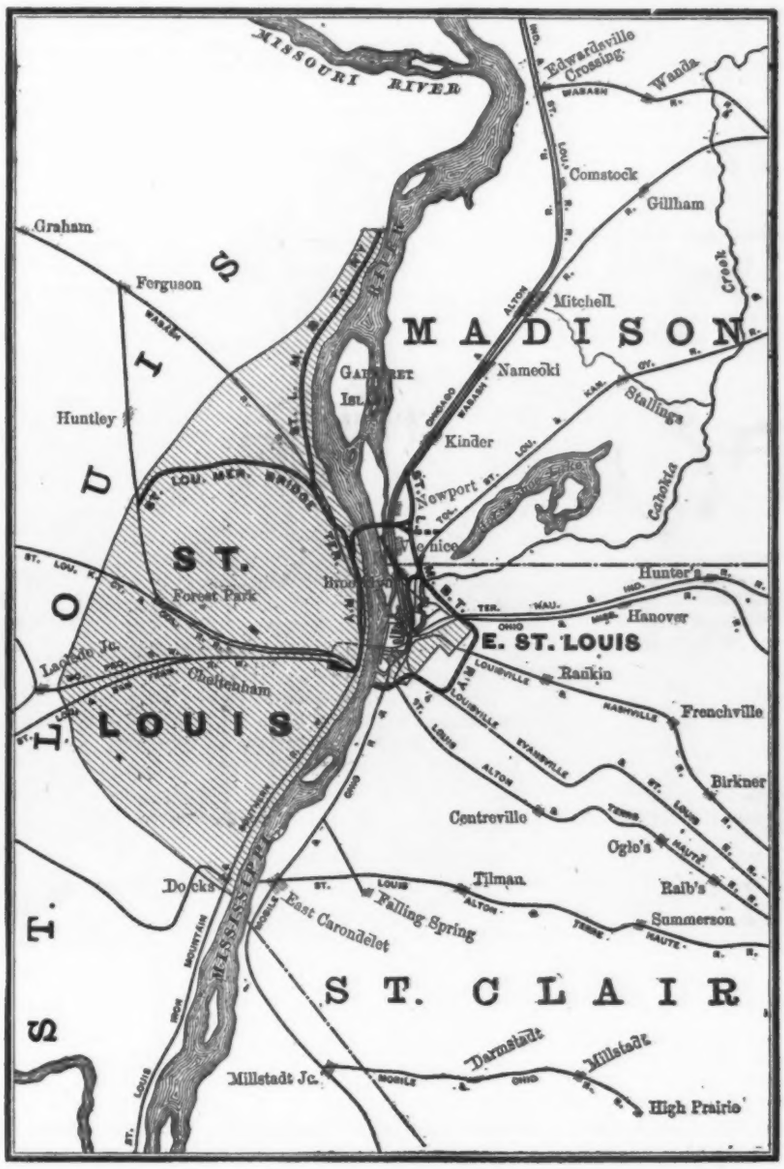
On the east end of the bridge, between the 425-foot length of permanent structure and the overhead crossing at the Chicago & Alton, Bee Line and Wabash Railroads, and east of this last-named structure to the earth embankment, the intermediate spaces are filled with a wooden trestle. The bridge at the crossing of these three railroads is made by two masonry abutments on which rest a 175-foot span and a 40-foot steel girder. The entire bridge and approaches is built for double track.

The style of the three spans of the main bridge is a double intersection pin-connected truss with horizontal bottom chord and a curved top chord. The entire structure is of steel, except pedestals and ornamental parts, which are of cast-iron, and nuts, swivels and clevises, which are of wrought-iron.

The steel was required to stand an ultimate tensile strain in the sample bar of from 63,000 to 70,000 pounds per square inch, with an elastic limit of not less than 38,000 pounds. Finished bars, selected by the engineer, were subjected to a breaking test, the requirements being an elongation of 10 per cent. before breaking. The structures are so proportioned that under all possible conditions the material cannot be subjected to injurious strains.

CONNECTING RAILWAYS.

As the accompanying engraving shows, there are at the end of the east approach three connecting lines, one to the north connecting with the three railroads above mentioned, and one to the east in the line of the east approach extended connecting with the Toledo, St. Louis and Kansas City Railroad, one to the south connecting with the Venice and Carondelet Belt Railway, and the East St. Louis and Carondelet Railway, through which belt railroads connection is made with the Vandalia, the Ohio and Mississippi, Louisville and Nashville and all other railways which reach East St. Louis. Arrangements have been perfected by which the Terminal Company will have extensive rights on the belt railroads above mentioned. By these various connecting lines the bridge will be closely and conveniently connected with all of the railroads that converge at East St. Louis, and it will also have a connection through these belt and connecting lines with elevators, mills, warehouses, stock yards, railroad transfer yards and industries of all kinds located in East St. Louis.



THE TERMINAL CONNECTIONS OF THE ST. LOUIS BRIDGE.

A railroad has been projected, and is now under construction, leading from the east approach of the bridge to extensive coal fields about 20 miles distant. The mines and railroad will be owned and operated by a company closely allied to the Merchants' Bridge and Terminal Companies. The coal is considered the best and nearest to St. Louis of any mines now worked. These coal fields are inexhaustible. This coal railroad will be opened for business this year.

The west approach connects with the Wabash Road which enters St. Louis from the north on the west side of the river, and with St. Louis Transfer Railway. It will have a connection with the Chicago, Burlington & Quincy Railroad on both sides of the river, and the Terminal Railway will, by its elevated structure, reach and connect with, by arrangements already made, the St. Louis & San Francisco Railway. It has the right under its amended franchise from the City of St. Louis to connect with the Union Depot tracks. It also is advantageously situated on the streets leading from the bridge into the center of the city, or connection with the various industries now in operation or contemplated.

Parallel with and adjacent to the St. Louis & San Francisco tracks the Terminal Company has purchased, partly from this railroad and partly from private parties, an extensive tract of ground for a local freight and passenger station more advantageously situated than any freight station connected with the present bridge.

These terminal grounds are on Gratiot street, extending from Eighth street to Twelfth street, being about 1400 feet long and 150 feet wide. The freight stations of the old bridge are in the low grounds of Mill Creek Valley and are difficult of access. All of the freight stations of the Terminal Railway are on higher ground and much more advantageously situated for all parts of the city, both north and south of the present Union Depot.

The Terminal Railway Company have already acquired by purchase lands and blocks of ground contiguous to their line, necessary for right of way, freight and passenger depots, yard room, machine shops, &c., at a cost of $797,000; this was purchased or contracted before any advance on account of construction of the Bridge and Terminal Railway Company, and has very greatly advanced in value, and in addition is acquiring, by condemnation proceedings and purchase, land at a cost of $527,000 at present market valuation, making a total of $1,224,000 invested in real estate, located in the business or central part of the city of St. Louis.

In addition a land improvement company, formed of directors and stockholders in the bridge and terminal companies, purchased, mostly prior to the construction of the work, large tracts of ground in Illinois, for the line of the east approach and its connecting lines, and in the city of St. Louis, along the line of the Terminal Railway, large tracts of land now become very valuable by the raise of property, caused by the construction of this important work. This land improvement company is an organization closely allied to the Bridge and Terminal Company, and proposes to hold the purchased lands for the benefit of the Terminal Railway Company.

The Pittsburgh Car Service Association, embracing all the railroads entering Pittsburgh and Allegheny, have issued the following circular to consignors and consignees of freight within a distance of 40 miles from Pittsburgh: "Notice is hereby given that, commencing at 7 o'clock, a.m., March 31, 1890, there will be a charge for the detention of cars and use of tracks of $1 per car per day, or any fraction thereof, if not loaded within 48 hours after being in position for loading or unloading within 48 hours after arrival; not including Sundays or legal holidays." The notice has been signed by all the railroads that enter Pittsburgh.

Post or Wall Drill.

The illustrations here presented show a new 22-inch swing post or wall drill, made by Boynton & Plummer, of Worcester, Mass. Fig. 1 shows the machine as adapted to the ordinary machine shop use. It is strongly braced, so as to prevent springing when being put in position, and, having strong heavy brackets, is very rigid when fastened to wall or post. It occupies very little space compared with its capacity, being but 28½ inches from wall to front of table, a very desirable feature in many places where room is valuable. It is furnished with screw and wheel feed combined or singly. It is fitted with a simple device for operating the feed lever, by which the lever can be instantly lengthened or shortened, and when so shortened the lever can be used for quick return. This, they claim, is a desirable feature, as all the movements of screw-feed, lever-feed and quick-return can be operated on one side of the machine, the lever-feed never being locked to shaft in such a manner as to prevent the instant operating of quick-return. They are fitted with large four-step cone pulleys (11, 8¾, 6½, 4 inches), for 2¾-inch belt. Pulleys on countershaft are 10 inches diameter for 3-inch belt. The table is 19 inches in diameter and slotted for fastening work. The hole in spindle (which is of steel, and properly counterbalanced) is fitted for Morse taper socket No. 3, although sockets for taking chucks or straight shank drills are furnished when desired. Table has a movement of 18 inches. Traverse of spindle is 10 inches. Greatest distance from spindle to table is 23½ inches. Weight complete, 500 pounds.

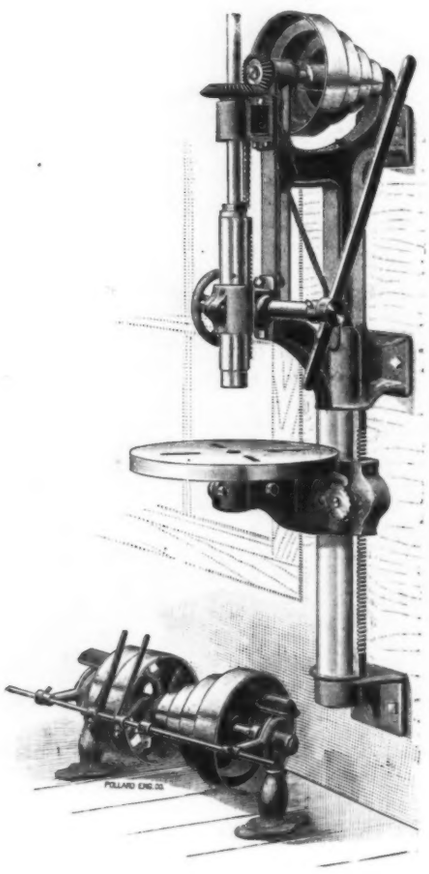


Fig. 1.

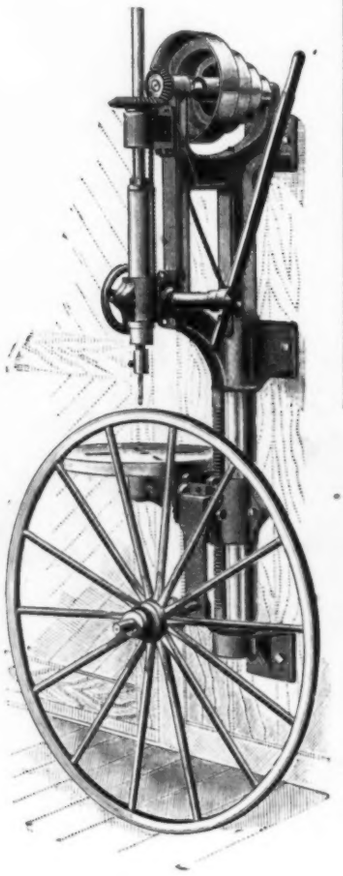


Fig. 2.

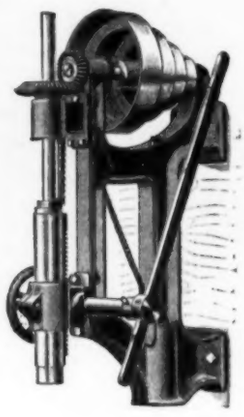


Fig. 3.

TWENTY-TWO-INCH SWING POST OR WALL DRILL.

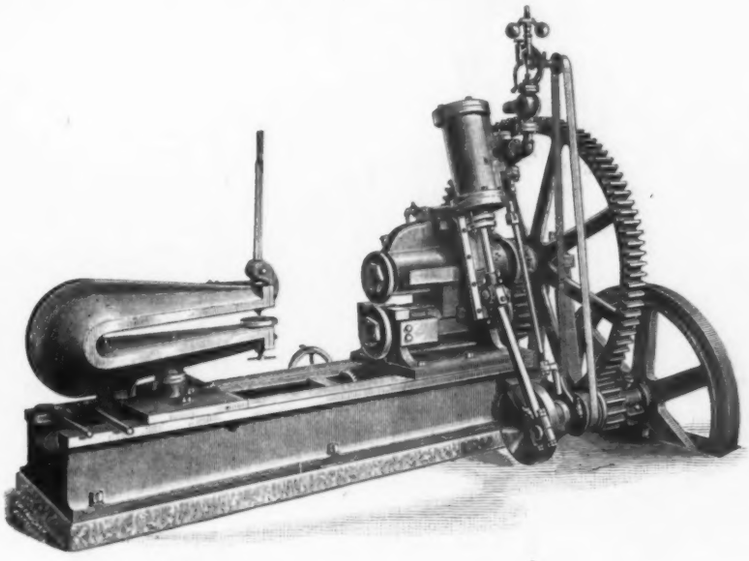
Fig. 2 represents the drill as adapted to blacksmith and carriage makers' use, being provided with a removable wheel-holding attachment, on which wheels are revolved when drilling holes in tires. This attachment, being fastened to the table, can be fixed at any hight to suit various sizes of wheels.

Fig. 3 illustrates the drill as arranged for an overhead or hanging drill. When placed on a cross-beam or hanging post, work of any dimensions can be brought under it. This machine as so arranged will be found a very valuable tool in many instances.

Fig. 2 and 3 in other respects are the same as Fig. 1.

Circular Cutting Machine.

The accompanying cut represents a circular cutting machine, recently put on the market by S. Trethewey & Co., Limited, of Pittsburgh, Pa. This machine is designed to cut boiler heads, circular saws, &c. A valuable feature of it is that it will cut a circle of any size without a center mark, which is peculiarly desirable in cutting boiler heads. The machine can also be used for cutting straight work as well as circles, and it is capable of cutting plates up to $\frac{5}{8}$ inch in thickness by 72 inches in diameter. Smaller sizes are also made that will cut up to $\frac{1}{4}$ inch thick, which can be run with belt power. One of these machines was recently placed in the Black Diamond Steel Works, of Park Brother & Co., Limited, at Pittsburgh, for cutting boiler heads, and has given good satisfaction. The firm have also recently received an order from Carnegie, Phipps & Co., Limited, for one to be placed in the Homestead Steel Works, at Homestead, Pa. It will be of a heavy type, and will be capable of cutting plates $\frac{3}{4}$ inch thick and 100 inches in diameter.



CIRCULAR CUTTING MACHINE.

A fire at Pullman, Ill., last week, wholly destroyed one of the large shops in which the hammer work on axles and other iron work is done. The building covered an area of 175 x 75 feet, and was a frame structure covered with iron. The loss was $28,000. The fire is supposed to have been started by a spark from one of the furnaces, and it burned so rapidly that some of the men did not have time to secure their clothing. Much of the iron work used in the construction of cars was prepared in this shop by about 350 men, all of whom are now thrown out of employment until repairs, which will be begun at once, can be made.

William B. Tyler, representing the Buffalo Forge Company, of Buffalo, N. Y., has closed a contract with the South Superior Improvement Company for heating apparatus for the factory of the La Belle Wagon Company, of Fond du Lac, Wis., who have a branch under another name at West Superior. The hot blast system, employing fans for the distribution of heated air, has been adopted. The dry kilns will be heated by the same system also. The blacksmith shop will be furnished with a complete system of forge blowers and smoke exhaust, by which means the gas and smoke, which will naturally accumulate, will be driven through an outlet. The wood working machinery will be connected by piping direct with the furnaces.

Springing a Bridge Span.

A novel method will be adopted by the Pennsylvania Railroad Company in erecting the center span of its new bridge at Brunot's Island. Instead of resorting to trestling in the river, as is customary in this type of bridge, it will be constructed close to the shore. This will be done by the use of a sufficient number of rafts to accommodate the dimensions of the span, which will be 520 feet in length. On these rafts trestle work will be constructed several feet higher than the span will be when sprung, and on the summit of these the span will be built. When completed and ready to be put in its place these rafts will be towed to the spot, and when everything is in readiness will be pumped sufficiently full of water to permit of sinking them the desired depth necessary to lower the span on the piers on which it will rest.

This plan was adopted by the company to avoid a repetition of the annoyance sustained by it in the construction of the railroad bridge at Steubenville and to cause no retardment of navigation. The engineers who have the matter in charge estimate that no greater time than 30 minutes will be consumed in towing the span on its structure of rafts from the wharf and putting it in position permanently. The company had the consent of the Government to go about constructing the span in the customary way, but at an outlay of nearly $20,000 adopted the scheme outlined. The cost of the bridge when completed will exceed a $1,000,000, and its need would never have arisen had it not been for a want of yard room.

A Cleveland paper says: There is a great deal of Ohio capital invested in and about Chattanooga. Some time ago ex-Governor Foster and Senator Cal. Brice purchased a tract of land underlaid with iron ore and coal, for which they paid $110,000. Furnaces will be erected and the manufacture of iron engaged in. The town of Fort Payne, near Chattanooga, was nothing but a cornfield two years ago when it was purchased by Boston capitalists. It now has a population of 4000.

Tests of Anti-Friction Metals.

Prof. H. G. Torrey recently made an extended series of tests to ascertain the qualities of the best known anti-friction metals when subjected to work such as is in accordance with every-day practice. The tests were made for the purpose of ascertaining the comparative merits of the best known metals of this character under the sevcrest conditions. Some 30 or 40 metals were tested, and from these three or four were selected as being the best, and which were then subjected to an extreme comparative test in order to ascertain without doubt which was the best for the purpose. In each case in the final test the best oil was used as a lubricant, extreme care was exercised in fitting the bearings and journals, and an accurate record was taken as the test progressed. With deoxidized genuine babbitt running 15 minutes, with a pressure of 1000 pounds per square inch, the metal wore considerably and flowed at the side. With Hoyt's genuine babbitt metal for a run of five minutes, with 1000 pounds per square inch, the result was in a measure similar to the above. With Posts' zero metal for a run of 10 minutes, with 1200 pounds to the square inch, the metal showed extreme wear and the box was practically destroyed. With Magnolia anti-friction metal, under a test of 50 minutes, with 1200 pounds to the square inch, this being followed 25 minutes with 1425 pounds to the squre inch, the bearing showed only in a slight degree any evidence of the extreme duty it had to perform. In the six tests the diameter of the shaft was 5 inches, the velocity of the rubbing surface was 2033 feet per minute, and the revolutions of the shaft per minute was 1600. The load placed upon the metals varied as given above. The Magnolia metal showed that under the most severe duty, running at an excessive speed and far overloaded, it maintained its original form and showed no evidence of undue wear or excessive heating. It will be noted that this test is at least four times that required by ocean steamers or by the Government war ships, both of which cases may be taken as showing the extreme practice, or, in other words, a metal which will stand the test above given has a factor of safety of at least four when compared with ordinary practice; or, to express it in another way, it will perform safely four times the work required under the usual conditions.

Railway construction in Mexico is now more active than ever. Four railways now strike the frontier of the United States. The narrow-gauge Mexican National gives a new short line that brings the capital within five days of New York, and it is doing a prosperous business. The Mexican International, a branch of the Southern Pacific, connecting with the Central near Villa Lerdo, gives a standard gauge route nearly as short. The Central has built up a fine local traffic beside which its international business is inconsiderable, either in amount or remunerativeness. It has built a branch to Guadalajara, the great trade center of Western Mexico, and its Tampico division, to be finished in about a month from now, running through some of the grandest scenery on the continent as it descends across the Eastern Cordilleras to the coast, will develop a formidable rival to Vera Cruz. The Interoceanic, between Vera Cruz and Acapulco, on the Pacific, with a branch to the Gulf via Pueblo and Jalapa, is making rapid progress, as well as the Tehuantopic, across the isthmus.

Philadelphians represent that $800,000 are available for the erection of a new mint and that the old mint property will sell for $1,000,000.

PROVIDENCE NOTES.

Extensive alterations and improvements are being made at the works of the American File Company, Central Falls. All of the heating furnaces are being rebuilt and new ones added. The facilities in this department will be increased to quite an extent when completed.

The Nayatt Brick Company, at Nayatt, have just received a large locomotive from the works of H. K. Porter & Co., Pittsburgh. The new engine will supersede the horses which have been used for the transportation of cars loaded with clay at the company's yard.

The Woonsocket Machine and Press Company will make an addition to its works in the near future. The addition will be four stories high and 128 feet long by 46 feet wide.

This week the Corliss Safe and Vault Door Mfg. Company shipped to the Hoboken Bank for Savings, of Hoboken, N. J., one of their 36-inch burglar-proof safes, weighing 10,000 pounds, with two 46-hour Sargent & Greenleaf time clocks attached. This safe was made especially for the bank and has bronze compartment doors.

The contract for building the new bridge at Warren was signed this week, having been awarded to the King Bridge and Machine Company, of Cleveland, Ohio. The bridge is to be 136 feet long and 32½ feet wide. The substructure is to be of heavy granite and the superstructure of wrought iron, and it is to be a high-truss swing bridge. According to contract, it is to be completed by the 15th of August, 1890.

George S. Slocum, of Newport, has invented a device for attracting back to the overhead wire the trolley wheel of the electric cars when it leaves the wire.

Gen. Nelson A. Miles, U. S. A., accompanied by Major John I. Rodgers, of his staff, arrived from New York last Wednesday morning, to inspect the work of casting the 12-inch mortar guns which the Government is having done at the Builders' Iron Foundry on Codding street. They inspected every detail, from the iron in the rough to the completed gun. The object of the visit was primarily to ascertain whether or not it would be possible to establish another plant in the West. The cost of transporting these enormous engines of war to California is very great, being about $600 apiece, and if the casting for the guns ordered for the Pacific Coast could be made nearer their destination, this carriage expense would be saved. There are 128 of these 12-inch mortar guns provided for the coast defences of San Francisco in the appropriation, and the cost of getting them across the continent will consequently amount to the snug sum of nearly $100,000. General Miles expressed himself as seeing no reason why they should not be cast in San Francisco, or near that city.

The Providence Steam and Gas Pipe Company are equipping the various large departments of the W. M. Brewster factory at Georgetown, Mass., with Grinnell automatic sprinklers.

The power house of the Belt Line Railroad at Lynn, Mass., will be of brick, 50 x 110 feet inside construction, with mansard roof 14 x 82, six feet in hight. The interior of the power house will be divided into the engine room 50 feet square, and the dynamo room 50 x 60 feet. A 200-horse power Greene engine, made by the Providence Steam Engine Company, will be located in the engine room, and two 80-horse power dynamos in the dynamo room.

A syndicate of Boston business men have in view the purchase of the Goodyear rubber plant on Westfield street, this city, and intend to begin the manufacture of a certain kind of patent insulated electric wire. Henry E. Russell is the prime mover in the enterprise and has managed it so far, while with him is a company of rich capitalists as well as shrewd business men, who will undoubtedly carry the affair through to success. The wire has been thoroughly tested by various experts and tried at the Cambridge electric works, being pronounced by all as the best thing of the kind yet produced. It will be manufactured under patents to Russell A. Dennison, formerly of Potter & Dennison, of this city.

SPEED OF THE CUSHING.

After waiting over a week for pleasant weather, and experiencing only heavy winds and seas, the torpedo boat Cushing had almost a perfect day last Monday for the final speed trial, and took advantage of it, being out all day. She went down the bay in the morning from Bristol, and began her continous three-hour run over the course which had been marked out from Conanicut Park, at the north end of Conanicut Island, to Fort Adams, at the entrance of Newport harbor. The conditions for the trial were excellent, except that the boat labored under some disadvantage, owing to the absence of some of her firemen, who were ill, and others who were not accustomed to the craft had to take their places, one being taken from the torpedo station at Newport. She made during the entire run the full 22 knots required by the Government.

The Board of Exports appointed by the Navy Department to superintend the trials of the Cushing has worked out the figures made in the speed trials as follows. She ran over the measured mile seven times:

	Min.	Secs.
First time	2	49.4
Second time	2	35.4
Third time	2	45.2
Fourth time	2	36.8
Fifth time	2	41.9
Sixth time	2	38.2
Seventh time	2	37.2

The average time is 2 minutes 40.6 seconds, which equals a speed of 22.4 knots. It may safely be said that the Cushing has exceeded her contract speed by not less than one-quarter of a knot. The builders, however, will not receive any bounty, as it was stipulated that none should be paid unless her speed exceeded 24 knots.

The final trial was made Thursday, when a run of three or four hours was made outside; the Cushing going half way to Block Island and back. She was loaded with weights equal to supplies sufficient for a trip of 10 or 12 days. She was at different speeds, and stopped in the trough of the sea, and it was found that she rolled very little, only about 20° or 30°. She threw spray while going head on, but not badly. Commander Jewell, of the Board of Naval Officers, said that she behaved finely, and was perfectly safe, and that he would be willing to cross the Atlantic with her. The Naval Board will render a highly favorably report.

White Lead Consolidation.

A grand consolidation of the six local white lead companies of New York and vicinity took place on Thursday last, the stock of the minor organizations being merged into that of the National Lead and Oil Company. The object of the consolidation, as explained by W. P. Thompson, president of the Lead Trust, is to so facilitate the business of making lead that it can be produced for the lowest possible price, and at the same be sold without competition. One set of salesmen, he said, will cover the territory which in the old days used to be covered by six, and in place of six boards of salaried officers there will be one. As the business of the new company is to be big, however, and as some of the officers objected to relinquishing their salaries, the new board of officers will be a double-decked affair, with one president, two vice-presidents, a secretary and assistant secretary, treasurer and assistant treasurer, all on salaries commensurate with the magnitude of their positions. The local factories are to be run just as they have been heretofore. The directors of the National Lead and Oil Company will be elected in a few days, and those directors will elect the salaried officers on April 7. Among the stockholders who were present at the several meetings held were Stephen R. Bradley, Sheldon Leavitt, John J. Steenken, of Washington Park; B. P. Rowe, secretary of the three Brooklyn companies; John A. Stephens, secretary of the Jewett Company, and B. C. Webster. The capital stock of the new company is $1,000,000. The word "Trust" is no longer heard of.

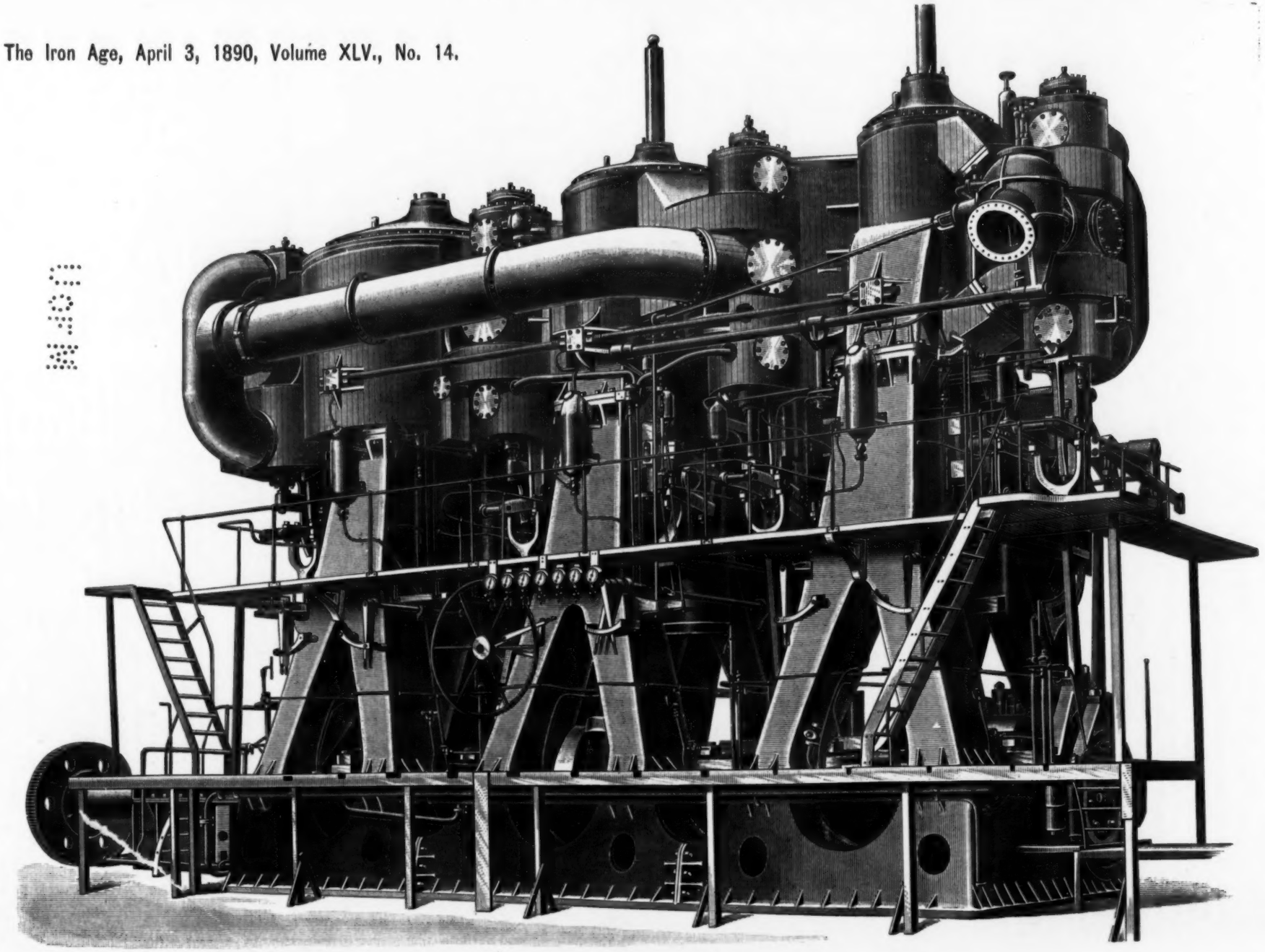
Colorado Coal and Iron Company.

The annual report of the Colorado Coal and Iron Company has just been issued, the net earnings for the year 1889 showing a total of $108,895.55, derived almost entirely from sales of coal and coke, but exclusive of the returns from sales of real estate. The company failed to earn its expenses during the months of February, March, April, May and June but a slight profit was made in July, increasing toward the end of the year. In January, 1890, the earnings had risen to $39,909.10. A condensed statement of the results of the year's operations shows that the gross earnings, including interest from investments, interest from sinking fund, securities, premiums and other items of profit, aggregated $1,314,897.20. The cost of production and manufacture, including interest, discount and exchange, taxes, insurance, royalties and extra expenses incurred in preparing the iron and steel department for operation, aggregated $1,297,775.58. This left net earnings of $17,121.62. As the interest on the bonded debt was $209,940, there was a deficit for the year of $192,818.38. The royalties earned and charged in above expenses was $58,722.43; the sales of real estate for the year amounted to $2,200,193.43

The total of coal mined during the year was 559,505 tons, of which the company used 208,665 tons and sold 349,807 tons. The total amount of coke made was 97,869 tons, of which the company used 7,714 tons and sold 83,595 tons, as against 104,337 tons in 1888, a decrease of about 20 per cent.

The operation of the iron and steel department was unsatisfactory up to the month of October. The present management upon assuming charge found this branch of the plant in such a condition that extended improvements and repairs were necessary. With the view of making such changes as would enable the company to manufacture more cheaply, Joseph Morgan, Jr., chief engineer of the Cambria Iron Company, made a thorough examination of the property, the improvements suggested being commenced in the summer. They are now steadily progressing. Blast furnace No. 1 was blown out in December, 1888, and it has been determined to modernize it and increase its capacity from 80 to 120 tons per day. It is expected to be in operation in April. Blast furnace No. 2 was put in operation on November 26, and up to January 1, produced 2723 tons of Bessemer pig. Authority for erecting a new pipe plant with a capacity of 60 tons per day has been received and work is to be begun at once. The rolling of rails was begun on March 8, 1890, and has since been continued at the rate of 150 tons a day.

Supplement to The Iron Age, April 3, 1890, Volume XLV., No. 14.



THE ENGINES OF THE STEAMSHIP CITY OF PARIS.

Accident to the City of Paris.

[*With Supplementary Sheet of Engraving.*]

Late on the afternoon of the 25th ult. an accident happened to the steamship City of Paris, which rendered her engines absolutely inoperative and created openings, through which the sea poured into several compartments. The story has been told by the daily press of how this, the greatest and speediest vessel that ever traversed the ocean, one presumed to be provided with all the devices known to the marine engineer to insure her safe and quick arrival in port, lay for over two days rolling, perfectly helpless, on the surface of the water. The accounts describe the vain attempts that were made to stop the leaks and to pump the water out by primitive and infinitely puny methods in comparison with the vast pumping power lying useless below her decks. And, finally, is told the sending of an open boat, with a volunteer crew, to the nearest coast over 200 miles away and the coming up of the Aldersgate, which towed the disabled vessel to Queenstown. With all of this the reader is acquainted.

The dispatches so far received convey no accurate information whatever in regard to the nature of the accident, and are so vague that they range anywhere from the destruction of the low-pressure cylinder of the starboard engine and the breaking of the circulating pipes, to an extended rupture of the double hull and the complete disappearance of the starboard engine, which, according to one account, now rests anywhere on the bottom of the Atlantic within 200 miles of the coast of Ireland. What may be received as trustworthy is the report that the trouble began with the starboard engine, the low-pressure cylinder of which was destroyed. How completely this was affected and the exact cause is at the present writing only a matter of conjecture, and it is therefore useless to attempt to point out what might have occurred and might have produced the result.

It seems further authenticated that the breaking down of this cylinder destroyed the circulating-pipes, and thereby permitted the free and rapid entrance of water into the engine rooms. The two engines are located in compartments formed by two transverse bulkheads and a central longitudinal bulkhead. In each room is a triple-expansion engine of 10,000 horse-power, making a total of 20,000 horse-power exerted on the twin screws. The prime object of thus separating the engines and making them and all their connections independent of each other was that, if one should break down the other might still be employed and the ship be driven at at least two-thirds its quickest speed.

Immediately after the accident, and which according to all reports was over in a few seconds, the water poured into the starboard engine-room and immediately filled the adjoining room. Whether this flow was made possible by the breaking down of the bulkhead by the disabled engine, the low-pressure connecting-rod of which might have been so liberated as to fly and beat down the bulkhead, or whether the water flowed through the door in the longitudinal bulkhead separating the engine-rooms, are points at present unknown. It is almost certain that either the falling or flying pieces of the low-pressure cylinder broke the circulating pipes and thereby opened a free passage for the water. It is not likely that the double hull was injured, and if upon examination such should prove to be the case and if it should be shown that all the water entered through the circulating pipes, the first question to arise will be, "Why were not these pipes provided with suitable valves which could be operated from the upper deck?" It is well-known practice to provide the inboard pipe of the circulating system with a valve to be closed by hand and the outboard pipe with a valve to be closed automatically should the direction of the flow of water through the pipes be reversed.

It is further stated in the dispatches that the vessel was filled with water in four of its compartments. This would of course necessitate the breaking down of at least two of the transverse bulkheads, if we consider the engine-rooms as constituting two compartments.

One most conspicuous fact is emphasized by this accident, and that is the value of dividing a ship by bulkheads into water-tight compartments. The City of Paris would undoubtedly have been at the bottom of the Atlantic a few minutes after the breaking of the cylinder, had it not been for her bulkheads, which are formed without openings below the water-line.

Until the leaks have been stopped and the engine-rooms pumped out, nothing reliable will be known regarding the exact cause of the accident, and the extent of the injury done, and speculation is therefore useless.

DESCRIPTION OF THE CITY OF PARIS.

Of the twin-steamships City of New York and City of Paris, the work on the former was vigorously pushed in order that the boat might be put in commission to meet the demand then existing. More time was taken with the City of Paris, and extreme care was exercised in the construction of every detail. This course was justified afterward when that vessel lowered the "first voyage" record, also the record both ways, and made an average record far below any of the trans-Atlantic liners.

The principal dimensions of the City of Paris are as follows: Length, 560 feet; beam, 63 feet; depth, 43 feet. Her hull is divided by transverse bulkheads into 15 water-tight compartments, including three for boilers and two for machinery, the latter being separated by a longitudinal bulkhead. The doors in the bulkheads are on the upper deck far above the load water line, it being determined not to trust to the doors being promptly shut in cases of danger. None of the compartments exceeds 35 feet long, and the quantity of water they hold to load water line is 1250 tons, or to upper deck 2250 tons. Even were two or three filled (as was the case here) the flotation of the vessel would not be placed in danger, and her buoyancy could easily be trimmed. As an additional precaution, the vessel has two bottoms, the space between them being 4 feet. They serve a double purpose, for not only will the existence of an inner bottom insure that no part of the ship will be flooded by a fracture of the external bottom, but the space can be utilized for carrying water ballast to the extent of 1600 tons for adding to the stability or altering the trim of the ship. One other noteworthy principle of the internal arrangement may be mentioned. The vessel is provided with a rolling chamber extending from side to side and 35 feet in length, which counteracts the motion of the ship when rolling. There are five decks, each having an area of 27,000 square feet. The principal saloon is on the main deck, and forms a principal feature in the internal arrangements. Three decks have been taken into the hight of the saloon, the dome of which is level with the top of the houses on the upper deck, thus giving a hight of 22 feet. The dome is 53 feet long and 25 feet wide. It is supported by heavy steel stanchions, the arch itself being formed of strong yet light framework of steel, to be covered with ornamented wood, and the spaces are filled in with beautifully designed stained glass 1¼ inches thick, which will be quite capable of withstanding the North Atlantic blasts. On the upper deck there is a promenade at each side, about 10 feet in width, and extending for about four-fifths of the length of the vessels. The deck above shelters it. The space between the two decks is occupied by houses, which contain the principal public rooms of the ship, general saloon, ladies' saloon, smoking rooms, &c., and about 35 staterooms, all most artistically adorned. The exposed or weather deck above is known as the promenade. It extends unbroken from stem to stern. On it is a long house with the best passenger rooms, about 25 in number.

The rudder is of a novel description. It is formed so as to be a continuation of the lines of the vessel. It is a structure built up of steel plates and angle bars, and of sufficient strength to resist the exceptionally heavy strains that come upon it on account of its large area of 250 square feet, a surface greater than has yet been adopted even in ships of war. The strains upon the rudder and steering-gear are, however, greatly reduced on account of a part of the surface being on the forward side of the axis of the pintles. The machinery for turning this rudder consists essentially of two hydraulic rams, which are placed one on each side of an ordinary tiller. The plungers of these rams work in a direction at right angles to the tiller, and are connected to a sliding-block which can slide backward and forward upon the arm of the tiller. Thus while the rams have a simple reciprocating motion the tiller has a corresponding angular motion, which is transmitted to the rudder by a massive connecting rod connected by a simple pin joint to a short tiller on the rudder head. The gear is powerful enough to put the rudder hard over when the ship is going full speed ahead, each hydraulic ram being capable of exerting a thrust of 80 tons, which is increased by the nature of the mechanism to 140 tons on the connecting rod mentioned above, which is a shaft of steel 12 inches in diameter. The hydraulic pressure by which the rams are actuated is taken from the pressure main, which extends to the different parts of the ship, and the valves which admit pressure to one or other of the two rams are controlled by the quartermaster on the bridge by the motion of a small tiller, which takes the place of the usual wheel, and is said to admit of greater accuracy in keeping a given course. The position of the rudder is indicated on the bridge by a simple arrangement.

THE MACHINERY.

The accompanying engraving of one set of engines of the City of Paris was taken from *Engineering* by the *Scientific American* to whose kind courtesy we are indebted for its use. These vessels were the first of the merchant service to adopt the twin screw. Many of the features which are common to war ship machinery have been introduced into the design of these engines, in order partly to save weight and in consideration of the high piston speed. The engines are built upon a very solid structure in the ship, but have, in addition, a cast-steel bed plate. This bed plate is formed in three parts, each part weighing about 16 tons. The columns are also of cast steel, and are of the "split type." The condensers, which usually form part of the main engine structure, are made, as in war ships, of brass, and are quite independent. The cylinders and their covers are cast iron, but the pistons are of cast steel of the dished type. The crankshafts are built of steel; the thrust, tunnel and propeller shafts are also of steel. The crankshaft is 20¼ inches in diameter at the journal and

21 inches at the pin. The tunnel shafting is 19¼ inches, and the propeller shafting 20¼ inches. The piston rods and all the principal moving parts are of ingot steel. The piston rods have tail rods, and are attached to the pistons by flanged connections.

The high, intermediate and low pressure cylinders are 45, 71 and 113 inches in diameter respectively, the stroke being 60 inches. All the valves are piston valves, one being on the high, two on the intermediate and four on the low pressure cylinders. The adoption of the four sets of piston valves for the low pressure cylinder is unique, and is necessitated by the large port area in this cylinder, and to avoid the strains due to the great overhang which would be caused by the adoption of two sets only. The valve gear is of the ordinary eccentric type, the eccentric straps being of cast steel lined with white metal. The equilibrium valve, which controls the inlet of steam, is worked by an independent engine, which can be connected to the Dunlop governor. The adoption of this governor renders the handling of the main engine very much easier.

The turning engine is of a new type, being simply a hydraulic ram working by a pawl on a ratchet-wheel. This ram is vertical and takes up very little space, but is at the same time very powerful.

In addition to the usual draining from the jackets and casings, which is collected in the hot well, there is a continuous flow through the casings from the high pressure to the intermediate pressure casings, and from the intermediate pressure to the low pressure casing. In the latter casing the drainage passes into the low pressure cylinder in the form of vapor, there doing work, and finally passing into the condenser. By this means any accumulation of water is prevented in the casings when the engines are running, and the glands are always dry.

The air pumps are the only auxiliaries driven from the main engine. There are two of them to each engine, of the ordinary vertical type, and they are worked by levers off the high pressure and low pressure crossheads. A small oil pump is also driven off the main engines. It is for keeping the crank pits clear of oil, which is forced into the stern tubes.

The boilers are fed by Worthington vertical pumps, four in number, associated with Gilmour's feed heater. These during the trial proved satisfactory, and in this connection it may not be uninteresting to indicate briefly their system. Each pump has two 12-inch steam cylinders and 28¼-inch double acting water plungers, with a 10-inch stroke. There are two pumps in each engine-room. Of these one supplies the feed heater with water at the temperature of the hot well. This water has its temperature raised in the feed heater by live steam from the boiler to nearly the boiler temperature, and the second pump delivers this heated feed water at a slightly increased pressure to the boiler. There is no advantage on the score of economy; but in so far as the feed water is introduced at boiler temperature there is complete absence of any possibility of strain due to irregular cooling of the boiler plates. The heater can be thrown out at any time, and only one pump used, and as the capacity of each pump is sufficient of itself for boiler feeding, the other may be looked upon as an alternative in case of breakdown. In the ordinary arrangement, the first pump, which delivers from the hot well into the feed-heater, is controlled by a float in the tank, so that it will be impossible either to have overflow or an insufficient quantity in the hot well. As all the water passing through the feed-heater is at a high pressure all impurities in the water are deposited in the latter, from which they are occasionally discharged by means of a blow-off; and since the heater itself is in no way cramped or confined by large tubes, its cleaning becomes a very easy matter. Indeed, it is completely done by blowing off at regular intervals.

There are two fire and bilge pumps in each engine-room for general ship purposes. These are also so arranged that they can be used as feed pumps in the event of the main getting out of order, and they are connected to the double-bottom system of piping and are available for pumping the compartments between the bottoms should the circulating pumps be in use for other purposes. The water is circulated through each of the main condensers by two sets of 15-inch centrifugal pumps, either of which is more than capable of doing all the work required. There are fresh-water condensers in each engine-room, which have their own feeding and circulating pumps automatically worked. All these pumps are of the Worthington type.

The hydraulic installation of the ship, which is the most extensive fitted on shipboard, has its pumping engines—two in number—in the engine room. These engines are of the compound surface condensing type. These engines work seven hoists, nine derricks, two warping ends, a windlass, and two warping capstans aft on the promenade deck.

The steel boilers which supply the steam are nine in number, and are equally divided in three water-tight compartments. They are built of steel, the shell plates being $1\frac{3}{32}$ inches in thickness. The diameter of each boiler is 15 feet 6 inches, the length 19 feet, and the working pressure is 150 pounds to the square inch. The boilers are double ended, and have each six furnaces, the mean diameter being 3 feet 11 inches. The tubes are 7 feet 6 inches long, 2⅜ inches in diameter, and in each boiler there are 1056 tubes, or 9504 in the nine boilers. The total heating surface is 50,040 square feet. The furnaces on each end have a common combustion chamber. Each boiler weighs 74 tons.

The boilers are worked on what is known as the closed stokehold system. These were the first ships for the Atlantic passenger trade that had been worked on this system, and it necessarily introduces many novelties. There are no air hatches excepting those through which the fans draw down the air supply. The fans for supplying the air to the furnaces are twelve in number, and are each 66 inches in diameter. They are the result of very exhaustive experiments. The application of forced draught has become so general that the design of these engines has become equal in importance with the engine for propelling the ship.

LATER REPORT.

Dispatches received yesterday, since the above was written, state that the leaks have been stopped and the engine-rooms pumped out. An examination showed that the starboard engine had been disabled, the exact extent of the injury not being made known, and that the longitudinal bulkhead dividing the engine-rooms had been injured sufficiently to open a passage for the water. It was found that all water entered through the broken circulating pipes, the hull having been found to be intact. The port engine was uninjured, and by the aid of this engine the vessel has since steamed to Liverpool. This report, meager as it is, shows that the accident would have been trivial had the circulating pipes been provided with valves, to be operated from decks located above the surface of the water, as mentioned at the beginning of this article. The prime cause of the disaster is not as yet made known.

Mr. W. H. Sweet, of Philadelphia, who has for several years been connected with the American Iron and Steel Association, was appointed at the same time with Mr. Swank to take charge of the collection of iron and steel statistics for the Eleventh Census. Mr. Swank having withdrawn on account of ill health, Mr. Sweet is alone in the work.

Industrial Schools.

A number of merchants, especially those interested in textile goods manufacture, propose at once to begin an agitation in favor of a broad and comprehensive system of industrial schools, first in New York City and then elsewhere. The agitation was begun by the organ of the dry goods trade, which is satisfied that, unless American youth are taken and drilled thoroughly in the rudiments and the higher development of textile manufacture, this entire department of industry will before long pass absolutely into the hands of an undesirable class of foreign born and bred workmen. They say that the trouble with Americans is that they are not taught the patience and almost infinite care in respect to detail which makes the perfect artisan in these industries. The scheme is to establish such industrial schools as have been successful in some parts of Europe, and where an American youth, hampered now by the rigid rules respecting apprenticeship which the labor organizations maintain, may be thoroughly instructed in the higher branches of industrial pursuit.

A public meeting will soon be held. It is a serious question in the minds of some of those who are interested whether the State ought to be called upon to maintain such schools, and it is now a subject of discussion whether it would not be better to raise by subscription a sufficient fund to endow and handsomely maintain a first-class and really great industrial college.

The signal system in use in the French and Italian navies is interesting. Four lamps are strung on a backstay abreast the topmast, and so arranged, each with two bulbs and two shades, as to show red or white at the will of the operator. The switch-box contains a key or switch for each letter of the alphabet and a few other conventional signals, and each switch makes a different combination of the four lights. When it is added that each switch is marked with its appropriate letter or number, and the combination it produces, signaling is seen to be a remarkably simple affair. For reading, it cannot be hard to learn the combination used, and the great recommendation is the rapidity. Each letter is made by the simple closing of its appropriate switch, whereas in the Morse code the number of movements for a single symbol varies from one to seven. Another advantage is that the whole combination is before the eye of the receiver at a glance, whereas in the Morse code, when the combination of the one to seven flashes of one, two or three lights is finished, the receiver, if not possessed with remarkable concentration, has forgotten the beginning. Exactly the same remarks apply when comparing the semaphore with its various combinations of two arms, and the wig-wag flag with its successive waves to the right, left and front. The value of the Morse code in telegraphic communication must not be overlooked.

It is stated that Carnegie Brothers & Co., Limited, are considering the advisability of erecting a hospital at Braddock, Pa., for the purpose of taking care of employees that may be injured in their Edgar Thomson Steel Works at that place. The firm now pay $10,000 annually to the West Penn Hospital for the care of injured employees.

THE WEEK.

It is interesting to observe the progress of steam navigation as illustrated in the experience of the Atlantic liners. The Teutonic of the White Star Line and her sister ship, the Majestic, which comes out this spring, are built and engined on the theory that, leaving Queenstown Thursday afternoon they will arrive in New York on the Wednesday following. The cost of the Teutonic is said to have been not very far from $2,000,000, and the Majestic the same. This is understood to be the highest figure yet reached for an Atlantic liner. Her builders, Harland & Wolff, of Belfast, do not profess to build cheap ships. The Germanic, by the same firm, now 16 years old, still has the same boilers with which she was first fitted, and they are in perfect order. The latter when new was thought to be very fast, being able to sail 17 knots. Her successors in the trade, though nearly double the tonnage and among the longest ships afloat, attain a speed not to exceed 20 knots.

The wage system was the object of vehement attack by Lyman Abbott, of Brooklyn, in a lecture recently delivered at Chicago. "The wage system," he said, "is a system that diffuses poverty, makes a coffin of the cradle and a bier of the bed. It is time for us to learn no longer how to make wealth, but how to distribute it. We have developed in our midst a plutocracy and the worst possible government on earth. Let it not go down to our shame that we do not know or care to know that such facts exist and need re forming." The doctor closed with an eloquent appeal for the universal brotherhood of man—for an industrial government, wealth for the people, of the people, by the people. But the Doctor would disown the opprobrious title "Socialist."

The Canadian Minister of Finance, Geo. E. Foster, has introduced a tariff bill with marked protective tendencies. The exceptions made are: Mining machinery not manufactured in Canada, free; steel and iron used in shipbuilding, not manufactured in Canada, free.

The Senate Committee of the New York Legislature who have been investigating the subject, recommend, for the safety of human life, that all electric wires in New York City, and other cities having a population of 125,000, be speedily put under ground.

The Philadelphia Master Builders have organized a trade school for instruction in bricklaying, carpentering, stonecutting, blacksmithing and other trades. This course has become necessary on account of the exclusion of apprentices by trades unions from the employments.

The annual report of the New York Board of State Assessors contains this statement: "There continues to be a marked depreciation in the value of farm lands in nearly every county, and the depression among the farmers continues, while the prospect for improvement is not good. Many assert that after paying expenses they cannot realize from their farms sufficient to pay the interest on mortgages and consequently thousands of farms are falling into the hands of a mortgagee."

The growth of the dressed-beef trade in New York City has been remarkable as regards the percentage increase, but the amounts are not heavy. Starting in 1882 with receipts of 2643 tons, the returns show 106,235 tons as the receipts of dressed beef for 1889. New York's receipts of cattle appear to have suffered for a time from the gain in the dressed-beef tonnage and the remarkable expansion of that traffic in New England. From 366,487 tons in 1882 and 392,095 tons in 1883 the movement of live cattle into this city fell to 280,184 tons in 1886, which was also the low year for the cattle movement into New England. Yet since that date the receipts of cattle have been steadily increasing, and in 1889 the arrivals by all the trunk lines at New York were 412,962 tons, higher even than the high mark of 1883.

The introduction of tank steamers paralyzes the oil-barrel industry.

Some curious figures relating to revenue collections may be found by examining the Custom House statistics of the various ports. The accounts of the collector at New York at times foot up $20,000,000 in a single statment, while the aggregate receipts at the port of Beaufort, S. C., during the last fiscal year were just $9.40. At this latter port it costs a fraction more than $207 to collect each dollar the Government receives. At Saco, Maine, it costs $172 to collect a dollar; at Petersburg, Va., $44; at Georgetown, S. C., $37; at Edonton, N. C., $53; at Chrisfield, Md., $49, and so on, with numerous other ports in lesser sums. There are at least 40 ports which do not pay the expenses of collection, but as the aggregate collections are $225,000,000, and the entire cost of collecting that vast amount is little more than $6,500,000, the loss at the insignificant ports is of small importance. The whole number of ports at which collectors or surveyors, or both, are stationed is about 150.

The Assembly passed both the bill for a bridge over the Hudson River and that for a bridge over the East River by way of Blackwell's Island. The latter is mainly in the interest of the Long Island Railroad Company, which seeks a connection with the Grand Central depot.

The question of rapid transit in this city has at last been focused by the Railroad Committee of the State Senate which favors a bill providing that there shall be a State Board of Rapid Transit Railroad Commissioners, to consist of eight members, who shall be appointed by the Governor and confirmed by the Senate. Four of the commissioners are to be Democrats and four Republicans, and they are to hold office for six years. They are to have jurisdiction over all cities having a population exceeding 100,000, and in all such cities, when the board is considering rapid-transit routes for such cities, the Mayor of the city shall be for the time being an ex-officio member of the board. The commissioners may lay out routes over, under or through all streets, avenues or lands, including blocks between streets, with the consent of the local authorities and with the conset of one-half of the property holders, or the determination of the commissioners appointed by the Supreme Court in lieu of the consent of the property holders.

Thus far eight draftsmen in the Government service have resigned to accept higher salaries with private shipbuilders.

The foreign commerce of Philadelphia has increased very largely during the last three months, mainly due to the growth of the sugar trade and heavy exports of corn, the latter comprising 4,000,000 bushels against 1,800,000 bushels during the same time in 1888. Improved terminal facilities work to special advantage.

The city of Brooklyn, which in 1880 had a population of little over 500,000, now has nearer 900,000, and the total valuation of real and personal estate for 1889 was $428,500,000. Last year new buildings were erected which cost $26,331,000. In the last two years over 30,000 buildings have been put up, representing an investment of fully $148,000,000. The evidence of growth is undiminished. Fine buildings are everywhere springing up in the suburbs.

Brooklyn is going to have a real estate exchange building on Montague street, to cost $250,000. The facade will be of brown stone.

The lumber output of the choicest pine lands in the Lake Superior region, known as the Ashland district, Wisconsin, will amount to 200,000,000 feet, or from 15,000,000 to 20,000,000 feet more than last year.

The utter inefficiency of the monitors of 6000 tons displacement, except for harbor defence, is argued with much force by a writer who assumes to have some technical knowledge of the subject. In Senator Chandler's proposed amendment to the Hale bill it is proposed to substitute monitors with their small supply of ordnance and coal for vessels of 10,000 tons displacement carrying two or three times as many guns and with far greater endurance at sea. The writer referred to says a vessel of the monitor class carries four 12-inch guns at a hight of 7½ feet above the water line and a few machine guns on a light superstructure between the turrets. The sides of the vessel extend 2 feet 9 inches above the water when lying in a perfect calm, and a fresh breeze on a fine day would toss up waves large enough in the mouth of a harbor or off the coast to prevent any service of the guns more efficient than an occasional shot while the water was not coming into the turrets through the gunports, for with the long modern guns it is impossible to run them in and close the ports. Such a vessel would offer a raft-like target 280 feet long and 60 feet wide, no small object, and making a good mark for the heavy main battery and multitude of lighter guns on the high and dry decks of the modern ships. In these views Admiral Jouett concurs.

Speculators have harvesed 1,000,000 tons of ice on Lake Champlain, Lake George and other bodies of water north of Albany, and now find themselves sorely perplexed in their efforts to obtain adequate means of transportation. Rail cars and canal boats are alike deficient in supply.

The total cost for mail service for 1888 was $53,793,357. Of this amount we paid to all vessels sailing under the American flag the munificent sum of $26,890.45, and to vessels under foreign flags, $394,168.19.

An iron-mining corporation has just been organized at Covington, Allegheny County, Va., on the line of the Chesapeake and Ohio Railroad. The company has 9300 acres of land in what is known as the Rich Patch mining region, adjacent to the Lowmoor Furnace properties, the tract being purchased about a year ago at a cost of $150,000. There is said to be an immense body of ore of a particularly fine grade in this tract, and it is the opinion of experts that 500 tons a day can be mined for a century to come. D. Shanahan, of Louisville, is president of the new company, and E. M. Nettleton, of Covington, Va., secretary and treasurer. A contract has been entered into to construct a railroad connecting the mines with the Chesapeake and Ohio road.

A charter has been granted by the Illinois authorities to the Chicago and Evanston Elevated Rapid Transit Company, with a capital stock of $12,000,000. The company's promoters include some of the leading capitalists of Chicago. Their object is to construct an elevated road from the heart of Chicago to Evanston, 12 miles distant.

MANUFACTURING.

Iron and Steel.

On Friday, the 28th ult., Charles M. Schwab, superintendent of the Edgar Thomson Steel Works, of Carnegie Bros. & Co., Limited, sent the following telegram to Andrew Carnegie in New York City: "Our output for yesterday: Ingots, 1648 tons; blooms, 1513 tons; rails, 1417 tons." In answer to the above, Mr. Carnegie sent the following: "That will do; stick a pin there, and make the average 1400 next year. Hearty congratulations." This is the best day's record made so far at these works, although it is liable to be eclipsed at any time

The employees of the Homestead Steel Works, of Carnegie, Phipps & Co., Limited, at Homestead, Pa., have received an advance of 10.56 per cent. in wages for the three months commencing on April 1, and ending July 1, next. It will be remembered that the employees at these works are working on a sliding scale based on the selling price of billets. On January 1, of this year, it was found that the average price of billets for the last three months of 1889, was $30.75, which gave the men an advance of 16.04 per cent. in wages for the first three months of this year. At the conference held on Saturday last between the firm and the Amalgamated Association, it was found that the average selling price of billets for the three months ending March 31, was $34 per ton. This gave the men another advance of 10.56 per cent., as stated above, making a total advance of 26.60 per cent since the arrangement went into effect The firm was represented at the conference by Vice-chairman H. M. Curry and Secretary Otis H. Childs, and the Amalgated Association was represented by William Weihe, president, and James Penney, vice-president.

The blast furnace of the Dunbar Furnace Company, at Dunbar, Pa., bursted on the 28th ult. The lining will have to be repaired and the furnace will be dampened down for several weeks.

The employees of the Pennsylvania Tube Works, at Pittsburgh, to the number of 600, have gone out on a strike and the entire plant is now idle. Some time ago the firm posted a notice that any man leaving the mill during working hours without permission would be discharged. One day last week three men disobeyed the order and were at once discharged. The matter was taken up by the balance of the men and notice was given the firm that unless the discharged men were taken back a strike would be ordered. The firm refused. At present there are no prospects of a settlement of the trouble.

The Swindell & Smythe Company, engineers and contractors, of Pittsburgh, have been awarded the contract for the erection of the bending and welding furnaces for the new plant of the Tyler Tube Company, at Washington, Pa. Work on the contract has already been commenced.

Another important enterprise is projected at Joliet, Ill. The stockholders of the Baker Wire Company and the Joliet Enterprise Company propose to organize a new company to be called the Western Wire Company, for the purpose of supplying their works with wire rods. The new company will build a rod mill in South Joliet, near several lines of railroad, to secure good shipping facilities. The rod mill may be supplemented by a wire mill, a nail mill and possibly a steel plant.

Wharton furnace, formerly the Port Oram, at Port Oram, N. J., will be blown in the present week under the management of Tooke Straker. The furnace has been thoroughly remodeled and its hight raised to 75 feet. It will run on three-quarter anthracite and one-quarter coke, and will have a capacity of 500 tons a week.

No. 2 Keystone furnace, of the Reading Iron Company, will be lighted on the 5th inst.

In the month of March the Scranton Steel Company, of Scranton, Pa., produced with two six and a half ton convertors 22,043 tons of ingots. In the same month the rail mill turned out 19,121 tons of steel rails.

The Lackawanna Coal and Iron Company, of Scranton, Pa., recently started its third converter. The company is building an additional blooming mill.

Cameron furnace, of the Cameron Coal and Iron Company, will probably be blown out in a few weeks.

The rolling mill at West Hamburg, Berks county, Pa., owned by the Reading Company, has resumed operations after being idle for four years. The mill has been leased and will be operated by the Pottsville Iron and Steel Company.

Negotiations are pending for the lease of the two furnaces of the Merion Iron Company, at West Conshohocken, Pa.

No. 2 furnace of the Thomas Iron Company at Hokendauqua, Pa., was blown out March 22 for repairs after a blast of over three years.

South Side furnace, South Side Iron Company, Limited, Boiling Spring, Pa., went out on the 24th ult.

The Allentown Rolling Mills have shut down temporarily. Eleven puddle and five heating furnaces in the beam and bar mill were running all Winter.

The National Tube Works Company, of McKeesport, Pa., have posted notices in their mills that any of their employees who secure a license to sell liquor will at once be discharged from the service of the company.

The contract for some of the pipe to be used in the construction of the Philadelphia company's new gas line from the Bellevernon field has been awarded to Riter & Conley, of Pittsburgh. The contract calls for seven and one-half miles 36-inch riveted pipe, which is the largest size made. Owing to the riveting it will take from eight to ten months to complete the work. The pipe, which will aggregate about 2600 tons, must stand a pressure of 150 pounds to the square inch. It will be tested at 175 pounds, for which purpose a specially designed hydraulic machine will be built.

The strike at the bolt works and rolling mill of the Oliver Iron and Steel Company, at Pittsburgh, mention of which was made in our issue of last week, has not yet been settled. So far, there has been no conference held between the firm and their workmen, although one may take place during the present week.

Phœnix Furnace of Brown, Bonnell & Co., at Youngstown, Ohio, which has been idle for some time undergoing repairs, resumed operations last week.

Pancoast & Rogers, of New York, have leased the Emans Furnace, at Emans, Pa. They are making repairs and improvements, and propose to blow in during June on all Cornwall ore, to be roasted in Davis Colby kilns.

Shoenberger & Co., of the Juniata Iron and Steel Works, of Pittsburgh, are having built a pair of 28 x 36 inch reversing engines for their blooming mill. The engines are to displace the old ones now in use, and will be put in place when the annual repairs are being made to the plant, some time in July next. They are being built by Mackintosh, Hemphill & Co., Limited, of Pittsburgh. At the blast furnaces of Shoenberger, Speer & Co. the device for conveying the molten metal direct to the converters is being tried in an experimental way daily, and when its complete success is demonstrated it will be put in full and continuous operation.

Machinery.

The Drop Hammer Forging Company have been organized at Akron, Ohio, for the manufacture of farming implements. Joseph Cook is president, F. M. Belden vice-president and J. D. James secretary and treasurer.

The Harrington & King Perforating Company, of Chicago, have just added 40 x 166 feet to their floor space, which they are filling with machinery rendered necessary by the continued expansion of their business.

A company with a capital stock of $500,000 have been organized at Pittsburgh to manufacture electric mining machines under the invention of M A. McMichaels, of Pittsburgh, and Dr. O. S. Weddell, of McKeesport, Pa. A machine has been in use at the Essen mines near Mansfield, Pa., for several weeks, and has been pronounced satisfactory in all its workings. The machine requires one man and a helper to operate it. It is claimed that with it 10 tons of coal can be dug ready for loading in mine wagons in a couple of hours. It is probable that the plant of the new company will be located at McKeesport, Pa.

The Union Drawn Steel Company, of Beaver Falls, Pa., manufacturers of cold-drawn steel shafting, are about to double their capacity for the manufacture of this article owing to the large demand they are having for it. As soon as it can be done one or more new buildings will be erected adjacent to their present plant.

The socket department of the plant of the Westinghouse Electric Company, at Pittsburgh, employing 125 hands, will be removed to Newark, N. J. The entire lamp manufacturing force of the company will be concentrated in New York City and Newark, N. J.

John Charter, president of the Charter Gas Engine Company, of Sterling, Ill., has resigned that office to devote his energies to the application of the Charter gas engine as a motive power for street cars. G. M. Robinson, formerly secretary, has been elected president and treasurer. Alex. McCloy, recently president of the Eureka Mfg. Company, Rock Falls, Ill., has been elected secretary.

William Tod & Co., founders and machinists, of Youngstown, Ohio, are building for the Illinois Steel Company, of Chicago, eight large rail straightening presses. An illustration of this press appeared in a recent issue of *The Iron Age*.

James Reus & Sons, founders and machinists, of Pittsburgh, are building a pair of 22-inch engines, 7-feet stroke, for a steamboat, with the largest fire-box ever built for high-pressure service. It is intended for use on Puget Sound at Seattle, Wash. The firm are also building engines with the same stroke for use on the Columbia River, in Oregon.

Hardware.

Ludlow Saylor Wire Company, St. Louis, Mo., manufacturers of art metal work in iron, brass, &c., have secured the contract for all the fancy and plain wire work, nickel tubing, &c., for the new Memphis Opera House, at Memphis, Tenn. They have also received an order from a bank at Brunswick, Ga., for a fancy iron counter railing with their new pigeon neck finish.

Northampton Cutlery Company, Northampton, Mass., have recently put in a complete plating plant, and are now pre-

pared to fill orders for all varieties of light and heavy silver-plated ware in addition to their well known lines. A new building is also being put up to be used for office purposes and as a stock and shipping room.

The Spencer Repeating Arms Company, of Windsor, Conn., have leased the basement of the Eddy Electric Company's new building, and will again commence the manufacture of the Spencer repeating shotgun. The company have an order for 500 guns, and the costly machinery made by the Pratt & Whitney Company is being placed in position.

A new tack company has been formed in Pittsfield, with a capital stock of $5000, and work will soon begin. Col. Walter Cutting is president.

The Meriden Machine Tool Company, Meriden, Conn., who succeeded A. T. Booth & Co. recently, have the following officers: H. Wales Lines, president; R. L. Peck, treasurer; W. L. Cheney, secretary, and are preparing to manufacture a variety of machines, tools and brass working machinery. At present they are turning out forming lathes principally.

Hussey, Binns & Co., Limited, shovel manufacturers, of Pittsburgh, are shipping a large order of shovels to Lisbon, Portugal. They are also recently in receipt of orders for shovels for shipment to Chili and Yokohama, Japan.

L. S. Starrett, Athol, Mass., manufacturer of mechanics' fine tools, who recently largely increased the capacity of his factory, reports that notwithstanding these additions, it is necessary to run extra hours in order to keep up with orders.

Sheldon Axle Company, Wilkesbarre, Pa., advise us that the reported strike of their men will cause but little if any delay and inconvenience. They have a large stock of finished axles and forgings on hand of all regular sizes. They have now nearly 200 men at work and are turning away a large number of applicants daily. They will be but little delayed in filling special orders and will have a full force at work again next week.

Covert Mfg. Company, Troy, N. Y., report that during the past season the volume of their business was far in excess of any previous year, and the demand for their goods thus far in the present season has greatly exceeded their expectations.

Miscellaneous.

W. G. Price & Co., proprietors of the Berlin Iron and Lead Works, at Pittsburgh, have decided to remove their works to West Jeanette, Pa., about 30 miles from Pittsburgh, on the line of the Pennsylvania Railroad. The contract for the buildings has been let, and they will cover about two acres, and will be built of stone and corrugated iron. The size of the main buildings will be as follows: 182 x 51 feet, with an 80-foot wing, 350 x 80 and 130 x 40 feet.

Gribble & Nash, of New York, have just had built and shipped to Hiogo, Japan, a complete plant for the manufacture of the camphor of commerce from the plants and wood fiber in which it is found in that country. The plant, which is composed of stills, engines, boilers and other pieces, weighs 55 tons, and when shipped occupied two cars. It cost about $75,000.

The Gatling Gun Company have closed negotiations for the purchase of a large tract of land on the Delaware River, near Darby. On 25 acres will be erected the various buildings necessary for the construction of guns of every kind. The remaining five acres will be taken up in the erection of houses for the use of the employees of the works. Col. C. Aufinger has been some time looking up a site for the works. The usual cost of a heavy gun runs into thousands of dollars, but under the patented process of this concern it is claimed that the cost will be about one-third what it is now. The company intend to make guns for the entire world, and the process they employ will, it is claimed, bring about a revolution in the making of heavy guns. Colonel Sprague is president of the company.

Neafie & Levy have been awarded a contract by the New York, Lake Erie and Western Railroad Company for a double screw ferry-boat, having a propeller at each end, to cross the North River. The new boat will be 230 feet long, 38 feet beam and 62 feet width over the guards and 16 feet depth of hold. The engines will be of the compound type. This will make the second ferry-boat of the design yet built, the other being the Bergen, built a short time ago at Newburg by T. S. Marvel & Co., the engines having been built by Delamater, from the design of J. Shields Wilson, of this city.

Brill's extensive car works in Philadelphia are being removed to a new location, comprising 18 acres. Most of the buildings are frame, covered with galvanized iron.

The Morris Machine Works, of Baldwinsville, N. Y., have lately built sand and steam dredging pumps for the Illinois Steel Company and the Bucyrus Steam Shovel and Dredging Company. Their entire plant is running 18 hours a day.

The Woodruff Metallic Mfg. Company have decided to lease their works at Joliet, Ill. They will manufacture brass furniture and a brass folding bed. The promoters of the company have secured a large tract of land north of the city and intend to commence building at once.

Among recently authorized corporations in Illinois are the following: Pneumatic Company, at Chicago, to maintain and operate pneumatic tubes and machinery; capital stock, $250,000; incorporators, J. C. Beeks, W. D. Maler, E. K. Beeks. Woolridge Mfg. Company, at Chicago, to manufacture household specialties; capital stock, $20,000; incorporators, B. Timmerman, W. T. Edton, John Woolridge. Chicago Stove Fixture Company, at Chicago, to manufacture stove fixtures and kindred articles; capital stock, $10,000; incorporators, A. F. Nastali, E. Hechniger and C. F. Lange. Consolidated Barb Wire Company, at Chicago, to do a general manufacturing business; capital stock, $50,000; incorporators, E. A. Rice, H. H. Waters, C. H. Keikham. Diamond Plate Glass Company, at Chicago, to manufacture plate glass; capital stock, $2,000,000; incorporators, A. L. Conger, G. T. Perkins, A. M. Barbour.

The Youngstown Bridge Company, of Youngstown, Ohio, have received a contract for the erection of a bridge at Memphis, Tenn. They are just now experiencing considerable trouble in getting bridge iron as fast as they need it. The firm have recently established agencies at Keokuk, Iowa, Nashville, Tenn., and Baltimore, Md.

It is reported that the Cambria Iron Company, of Johnstown, Pa., will hereafter make their own coke. They owned what is known as the Leamon mines at East Conemaugh, but never were able to coke the coal. For some weeks they have been making a test of the new Adam's coke ovens at the Atlas mines, Dunbar, Pa. Superintendent Taylor, of the mines, has made a report to the company, in which he stated that a high quality of coke had been turned out by the oven from the Leamon coal. The oven was tried in connection with an ordinary beehive oven charged with coal from the Atlas mines. The oven, besides putting a ton of coke more a day than the beehive, made 100 per cent. more coke from the same amount of coal. The Cambria Iron Company were perfectly satisfied and will put in a coke plant at Johnstown just as soon as possible.

The Berlin Iron Bridge Company, of East Berlin, Conn., who are now building for the Chesapeake Dry Dock and Construction Company, at Newport News, Va, the largest shipbuilding plant in the world, have also closed a contract with the Brooklyn Brass and Copper Company, of Brooklyn, N. Y., for the iron truss roofs of their new casting shop and rolling mill.

Frank Bridge, who has been superintendent of transportation at the Edgar Thomson Steel Works, of Carnegie Bros. & Co., Limited, at Braddock, Pa., for a number of years, has resigned that position to take charge of the motive power. Thomas Cosgrove, superintendent of labor, will take charge of the transportation department.

E. A. Uehling has resigned his position of blast furnace manager of the Bethlehem Iron Company to accept the position of manager of the furnace plant of the Sloss Iron and Steel Company, at Birmingham, Ala. His successor at Bethlehem has not yet been appointed.

James McDonald, manager of the Youngstown Bridge Company, of Youngstown, Ohio, has resigned his position, and has engaged with the Oliver Iron and Steel Company, of Pittsburgh. He will enter on his new duties on the 15th inst.

Not Trusts, But Combinations.

The word trust has become odious, on account of hostile legislation, and its use is studiously avoided. But combination goes on just the same, except as the formularies of organizations are modified to avoid legal entanglements. None are more eloquent than the promoters of these in portraying the evils of competition among small proprietors, as contrasted with the advantages of doing business on a scale of some magnitude, with a smaller proportionate number of salaried men, less machinery, &c. "Yet, there is one other feature about these combines," as remarked by a contemporary, "which demands serious attention—that is, the overcapitalizing and selling process which characterizes nearly all of them. Many of these operations are simply nothing less than the selling out of whole industries to the uninitiated at many times their actual values. They are huge speculations of the most reprehensible sort, inviting unknown disaster in the future, when new smaller capitalized concerns start up in competition, as they inevitably will. The Sugar Trust was capitalized at about three or four times its real value; the Lead Trust at about five times; the Whiskey Trust at about nine or ten, and the National Starch Association at about twice its value. These are only a few of the collection, many of which have been capitalized upon their profits instead of cost. There is but one means of preventing a crash in these speculative enterprises some day, and that is for the public to refuse to invest their savings for the benefit of speculators. Competition in the end will certainly squeeze out all the water in these combines; and the crash when it arrives will not be confined to the investing public, but will bring disaster upon industry and labor everywhere at the same time. The public should beware of the wily promoter and his flattering prospectus. We have yet to learn the distinction between the use and misuse of combination. Just now the abuse very largely prevails, and the penalty must be met.

The Iron Age

New York, Thursday, April 3, 1890.

DAVID WILLIAMS, - - - PUBLISHER AND PROPRIETOR.
CHAS. KIRCHHOFF, JR., - EDITOR.
GEO. W. COPE, - - ASSOCIATE EDITOR, CHICAGO.
RICHARD R. WILLIAMS - - HARDWARE EDITOR.
JOHN S. KING. - - - - BUSINESS MANAGER.

The Anti-Trust Legislation.

Little that is good has thus far come out of the protracted debate in the Senate over the bill reported by Senator Sherman from the Finance Committee. Certain modifications had been made by him in the original bill to meet objections raised chiefly on the ground of unconstitutionality. It declared unlawful all trusts, contracts and combinations entered into to hamper or check competition or to enhance prices to consumers. It authorized persons injured by such prohibited agreements to recover twice the amount of damages sustained. Subsequently, an amendment proposed by Senator Reagan was adopted, making all persons subject to a fine of not more than $10,000 or imprisonment not exceeding five years, or both, who engage in the creation of any trust in any capacity using its power for either of the following purposes :

To creat or carry out any restrictions in trade; to limit production or to increase or reduce the price of merchandise or commodities; to prevent competition in merchandise, produce or commodities; to fix a standard or figure whereby the price of any article, commodity, merchandise or produce intended for sale, use or consumption shall be in any manner controlled to create a monopoly in the manufacture, sale or transportation of any such article; to enter into any obligation by which they shall bind others or themselves not to manufacture, sell or transport any such article below a common standard figure; or by which they shall agree to keep such article or transportation at a fixed or graduated figure, or by which they shall settle the price of such articles so as to preclude unrestricted competition.

Another amendment which more seriously handicaps the bill is that of Senator Ingalls adopted, is aimed at dealers in options or futures in wheat, corn, oats, rye, barley, cotton and all other farm products, beef, pork, lard and all other hog and cattle products. Dealers in options and futures are to be increased and to pay $1,000 a year to the internal revenue collector, besides 5 cents on each pound and 20 cents on each bushel traded in. The business is to be placed under the supervision of the government, and a fine of from $5,000 to $10,000 be imposed for each offense against the law.

When it was found that the bill would in its original form apply to labor organizations and all kinds of trade organizations, the Senate indulged in another exhibition of flagrant demagogy. An amendment was promptly adopted exempting from its provisions any arrangement, agreement or combination between laborers to reduce their hours of labor or increase their wages, or between persons engaged in horticulture or agriculture, made with a view of enhancing the market price of agricultural or horticultural products. Such propositions were gravely discussed and actually passed in the Senate. During the debate frequent proofs were furnished of the fact that the legislators in Washington are lamentably ignorant of the true condition of affairs in many important lines of industry. The old, frequently ridiculed list of trusts and combinations, in the iron trade for instance, cropped up in all its absurdity, a striking illustration of the persistance of error.

There is little prospect that such a measure could become a law. For the present it has been referred to the Judiciary Committee with instructions to report back in 20 days. The debate and the amendments passed indicate, however, how popular clamor can exert a pressure upon what is generally considered our more deliberate legislative body.

Brazilian Affairs.

The acts and decrees of no Government have probably been more closely watched and variously criticized so far this year than those of the provisional Government of Brazil. The revolution of November 15, then from all appearances a mere military revolt of the most precarious kind at Rio, had taken Brazilians as much by surprise as was the case with the people in the United States and Europe. Everybody had expected that the Empire would outlast Dom Pedro's life. From what the world has since then seen and learned it, however, appears that General Fonseca and consorts struck the right keynote, and not a day too soon nor too late. Not only have all the provinces acquiesced in the new order of things, but there has not been a drop of blood shed anywhere from the commencement, although provincial Governors have been changed in two instances, and discipline among the soldiers at Rio has not been of the best, of which even as late as last week an example was cabled. Experience has so far shown that the heads of the Government at Rio are able men ; indeed, contrary to what they had been given credit for in the beginning. They have issued a dozen important administrative decrees, some of which on their face showed that they were big blunders; fortunately for themselves and the Brazilian nation the provisional Government is not obstinate, but pliable, the decrees were more tentative than anything else, and from the moment there came protests at home or in one case from abroad (about the new India rubber export duty) the decree was either quashed or modified. Thus even now the Government is trying to arrange matters so that the first general election under the republican form of Government can take place earlier than next September, the time originally fixed. In other words, the provisional Government has so well known how to steer its course amidst the breakers that surrounded it that there is now the almost positive certainty that the delicate interregnum till the Republic is legally and formally installed, will be successfully bridged over without serious trouble anywhere. We trust it may be so, for although Brazil owes Europe $1,100,000,000 in American gold, and the United States nothing, Brazil from a commercial point of view is as important to our people as to any European country, England included. We consume the bulk of what Brazil produces for export, and our domestic export thither increases at the rate of nearly 30 per cent. per annum.

The crucial test of confidence in Europe in the new order of things is of course the rate of exchange on London, *i. e.*, the number of pence at which the milreis will sell at any moment in Rio on that city. During the paternal reign of Dom Pedro the rate of exchange was ruled by financial causes merely. Thus it was low as long as the finances of the country were bad, *i. e.*, as long as there was a chronic, large, annual deficit, and too much paper money in circulation. Politics had no influence on the exchange then, because there were none, even revolts being unknown among the military and negroes, even after the latter had been emancipated.

It is different now. There are politics, although, as we have shown, quiet enough so far. The exchange on London during Dom Pedro's rule declined on account of bad finances, coupled with low coffee prices as low as 18d the milreis in January, 1886. Since then the advance in coffee has spread such prosperity in Brazil, and the finances have been so cleverly managed, that just before the November revolution the rate had gone above par, for it stood 28d. In other words, the paper milreis commanded a premium, a thing that had not occurred during half a century. To-day the private bills of exchange at Rio do not command over 22¼d, a decline of over 20 per cent. in four months and a half, and this chiefly because the provisional Government has shown a tendency to launch out freely into the issue of irredeemable paper money. At first 450,000,000 milreis were to be issued, but when protests and warnings came from all quarters, and the exchange suddenly dropped a couple of pence, the amount was limited to 200,000,000 milreis to begin with. We purposely say, to begin with, for we need not travel far from Rio southward to see what paper money depreciation means in a country which owes a great deal of money in Europe, and has to remit gold to pay the interest.

Of course we shall be told that Brazil is in an infinitely better position toward European financial men than the Argentine Republic, although Brazil owes your times as much money in Europe as the latter country. We shall be told that Brazil produces coffee, rubber and sugar which everybody wants, while the Argentine Republic produces wheat, an article low in value; meat of indifferent quality and hides depressed in value; the only thing really valuable being Argentine wool. To a certain point this is true, and so long as coffee remains high and the Brazil crop is large, Brazil has a very handsome surplus, all expenses deducted, as the following table will show, in which we have put

down the coffee crop of 1890, which begins to be marketed on July 1 next at the present more general estimate of 7,000,000 bags, and the price at 110 francs per bag instead of 134 francs, to-day's value, inasmuch as a 7,000,000-bag crop would not unlikely bring down the value to at least 110 francs:

Probable Brazilian Export in 1890-91.

	£	Francs.
Coffee, 7,000,000 bags, at 110 francs per bag of 60 kg., net		770,000,000
Cotton, sugar, india rubber, corn, hides, Paraguay tea and gold		300,000,000
Total		1,070,000,000
Deduct probable import		600,000,000
Interest on public debt and payments toward sinking fund thereof	£1,750,000	
Guarantee of interest to railroad companies, central sugar houses, &c	650,000	
Government purchases in Europe for the army and navy	500,000	
Six per cent. interest to all sorts of European companies in operation in Brazil	2,100,000	
	£5,000,000	or 125,000,000
Total		725,000,000
Net surplus		345,000,000

This brings the actual net surplus which will result to the country out of its normal production for export to the handsome amount of $69,000,000, American money, after liquidating everything. To flood a country in such a fine position with paper money would appear to any impartial observer downright folley in the face of the pitiful Argentine example, and we trust it may be avoided.

Profits of Iron Ore Mining.

More dividends are announced by Lake Superior iron ore companies. The Pittsburgh and Lake Angeline Company paid a dividend of $6 per share on the 25th ult., following one of $5 in February. Since January 1, 1889, or in 15 months the company have paid their stockholders $35.50 per share, or about $2.37 per share per month. The capital stock of the company is but $500,000, consisting of 20,000 shares of a par value of $25 each. The dividends declared in 15 months have amounted to $710,000, which it will be observed is considerably more than the entire capital. It is not surprising under these circumstances that the market value of the stock is over $175 per share. The company have a most excellent mine, and it is admirably managed to produce such results.

The Republic Iron Company declared a dividend of $1 per share last month, which was the fifth since October, and the impression prevails that $7 or $8 will be paid for the entire year.

These profits to the holders of mining stocks are phenomenal, but they are too large to continue permanently. It would not be surprising in a few months to have the situation of affairs completely changed by offers of more ore than the market can take, forcing prices down to an unremunerative level, and banishing for a time the hope of even small dividends. The agencies actively at work to cause this are the new mines which are being opened and the extensive preparations by old mines to greatly increase their output. If the decline in the price of pig iron indicates a depression in that trade of some duration and severity, the stockholders in mining companies have reason to look forward with apprehension, which will temper their rejoicing over the heavy dividends now in hand.

Federal and State Confiscation of Railways.

A momentuous decision in behalf of railways was rendered last week by the United States Supreme Court in the cases against the Railroad and Warehouse Commission of Minnesota; a decision that practically revokes all Federal and State Inter-Commerce Commissions, all their acts, decisions, laws and penalties, that throughout the United States involves millions of dollars in rate charges.

It has long been contended that the interference with the management of private property in the United States by legislative enactment, whether by the Federal or State Governments, is unconstitutional. The decision in question coincides with that opinion. It matters not in the eyes of the law if this private property is owned by common carriers, or dry-goods stores; the Constitution of this country emphatically declares that one of the chief purposes of its existence is the protection of the rights of the citizen and the property legally held in his possession. The Federal and most of our State Constitutions distinguish between the executive, judicial and legislative departments of the Government. Upon this distinction most important decisions would rest. It protects the citizen from legislative encroachment; protects his property, and secures him from such acts as these Commerce Commissions have been appointed to commit.

This is a feature that every business man in this country should understand, for it involves his monied welfare to an extent that settles once and forever his right to conduct honest business exactly as he sees fit, and to buy and sell for just such prices as he deems expedient, without any regard to legislative enactments, whatever their character. Until such time as an amendment to our Federal Constitution shall be made to read, "that the United States Government reserves the right to appropriate the property of its citizens," until such an amendment becomes a part of our Constitution, the courts of this country must decide in favor of the citizen.

Such in substance is the decision rendered by the court referred to. It lifts the oppressive laws that our Western railways are staggering under. It says to the legislators, "Your power does not extend to a point that will permit you to make tariff rates from one town to another; such acts come within the court's jurisdiction, not that of the Legislature." The decision reads: "The Commerce Commission has the power to declare rates, but such rates may be legally disputed and a court will decide if they are 'reasonable.'"

This is a mild way of putting the Legislature on its feet; a mild way of deciding in behalf of the sacred rights of private property.

It will take some of the people of this country a few months to comprehend its significance, so vast are the interests involved. The laws of these Interstate Commissions were onerous and dangerous to the best welfare of this country. No one will knowingly invest his capital in undertakings wherein its management is usurped by the State. To expect it would be preposterous.

As the right of ownership and the right to buy and sell, and the right to put one's own price on his own goods, are judicial questions, legislators have no power to interfere. But it will probably take most Western legislators, and Eastern legislators for that matter, some time to get it into their heads; for to-day the majority of them seem to think they can make about any law they please, and when it is so made, no higher authority has the power to interfere. In these anti-railway laws their appetites seem almost insatiable; bill after bill is now being introduced in Congress and State Legislatures. The conviction seems to have spread that they can govern the managements of great corporations and make them bow to their wills. What other interpretation is possible when the President of a great railway, T. B. Blackstone calmly and advisedly recommends the United States Government to buy out this country's railroads while they still retain some value to their owners; for at the rate of the present confiscation of their rights it is only a question of time when bankruptcy will stare them all in the face. Such was the report of the president and directors of the Chicago and Alton; and last week the motion was practically seconded by E. P. Ripley, general manager of the Chicago, Burlington and Quincy road, before a committee of the Iowa Legislature, who said: "When other States get tired of bearing Iowa's burdens the few solvent roads Iowa has will become bankrupt."

The Minnesota decision will relieve all of our railways of grave anxiety, for the future to them indeed looked dark.

OBITUARY.

WILLIAM U. JONES.

The death is announced of W. U. Jones, who was connected with the Andrews Brothers Company, at Youngstown, Ohio, for about nine years. During the past five years he, in connection with W. S. Johnston, represented the company in Buffalo. He was about 35 years old, capable, upright and attentive to his business, and was held in high esteem both by his employees and by the trade.

JOHN C. CAMPBELL.

John C. Campbell, formerly chief engineer of the Public Works Department of New York City, died in this city 27th ult. He was born at Cherry Valley, Otsego County, in 1817, and was the son of the late Judge James S. Campbell and nephew of Dr. William Campbell, Surveyor General of this State. Mr. Campbell

devoted his life and labors to engineering, and his first work of importance was on the Croton reservoir under Mr. Jarvis, in which he showed marked ability for his profession. Later he built a portion of the Hudson River Railroad through the Highlands. He went to Panama in 1850, occupying the position of chief engineer of the western portion of that road. His health failing he was obliged to return home, and soon after constructed a road in Indiana.

FREDERIC GRAFF.

Ex-Chief Engineer of the Water Department in Philadelphia, died in that city March 30, aged 73 years. Mr. Graff was for some time president of the American Society of Civil Engineers, and it is said that he considered his election to that position the greatest honor that was ever conferred upon him. He was also vice-president of the Franklin Institute, vice-president of the School of Industrial Art, a member of the Board of Trustees of the Building Fund of the Academy of Natural Sciences, and held other honorable positions.

ALEXANDER CRAWFORD.

Alexander Crawford, the pioneer iron manufacturer of the Mahoning Valley, died yesterday of "la grippe," aged 76 years. He built a rolling mill in New Castle, Pa., in 1839, and was the first to use coal in his blast furnaces at Lowellville. He was instrumental in organizing the New Castle and Beaver Valley Railroad Company in 1860, and was its president until he died, and also a director, and was largely interested in the construction of the Erie and Pittsburgh Railroad. He founded the Wabash Iron Company, of Terre Haute, Ind., now managed by his son. He was president of the St. Louis, Salem and Little Rock Railroad, having been interested in its construction, and was general manager of the Nashville and Knoxville Railroad, in which he had invested $2,000,000. His estate is valued at $6,000,000 to $8,000,000.

Washington News.

(*From Our Regular Correspondent.*)

WASHINGTON, D. C., April 1, 1890.

Chairman McKinley, of the Committee on Ways and Means, said yesterday that for the first time since the committees were appointed he felt relieved from anxiety concerning the tariff bill. The measure was submitted to the full committee yesterday at a special meeting. It will now be considered by them before being formally reported to the House.

The majority of the committee have been informed by the chairman that they will be allowed ten days in which to offer amendments to the bill before its submission to the House.

The Democratic members of the committee at an informal conference to-day decided to make the measure known as the Mills bill, which represents the policy of the Cleveland administration, as framed by Secretary Manning when at the head of the Treasury Department as the basis of all changes and amendments. They decided to act in the direction of free-trade, wherever they find that they can make a break in the Republican lines, as in the items of salt, lumber, hides, coal, iron ore and other articles upon which they think the majority may be divided on account of sectional interests and considerations. They propose to make an effort to include those articles on the free list, and are counting on certain Republicans to bolt the committee bill to that extent. When the McKinley bill is taken up the Mills bill will be substituted, accompanied by a minority report setting forth the reasons for their opposition.

While Messrs. Carlisle, Breckenridge, McMillan and other ultra tariff reformers are pressing their views in support of the Cleveland policy, ex-Representative Scott, of Pennsylvania, the foremost champion of the ex-President, is exerting himself to persuade his party friends not to include bituminous coal and iron ore on the free-list. He informed them in a lengthy conference that if they persist in their course with respect to these articles it will destroy all chances of party success in West Virginia and Virginia, and make an increase in the Republican representation in the Pennsylvania and Ohio delegations in Congress.

From present appearances, both parties will be pretty badly shaken up when the bill comes under discussion in the House.

The following is the official text of the scheduled metals and manufactures of iron and steel, of the bill "to reduce the surplus and equalize duties on imports and for other purposes," now before the committee, and in the form in which it will reach the House of Representatives in about two weeks.

Schedule C.—Metals and Manufactures of.

IRON AND STEEL.

1. Chromate of iron or chromic ore, fifteen per centum ad valorem.

2. Iron ore, including manganiferous iron ore, also the dross or residuum from burnt pyrites, seventy-five cents per ton. Sulphur ore, as pyrites, or sulphuret of iron in its natural state, containing not more than three and one-half per centum of copper, seventy-five cents per ton: *Provided*, That ore containing more than two per centum of copper shall pay, in addition thereto, one and one-fourth cents per pound for the copper contained therein: *Provided also*, That sulphur ore as pyrites or sulphuret of iron in its natural state, containing in excess of twenty-five per centum of sulphur shall be free of duty except on the copper contained therein, as above provided. *And provided further*, That in levying and collecting the duty on iron ore no deduction shall be made from the weight of the ore on account of moisture which may be chemically or physically combined therewith.

3. Iron in pigs, iron kentledge, spiegeleisen, ferromanganese, ferro-silicon, wrought and cast scrap iron and scrap steel, three-tenths of one cent per pound; but nothing shall be deemed scrap iron or scrap steel except waste or refuse iron or steel fit only to be remanufactured by resmelting or rerolling.

4. Bar iron, rolled or hammered, comprising flats not less than one inch wide, nor less than three-eighths of one inch thick, eight-tenths of one cent per pound; round iron not less than three fourths of one inch in diameter, and square iron not less than three-fourths of one inch square, nine-tenths of one cent per pound; flats less than one inch wide, or less than three-eighths of one inch thick; round iron less than three-fourths of one inch and not less than seven-sixteenths of one inch in diameter; and square iron less than three-fourths of one inch square, one cent per pound.

5. Round iron, in coils or rods, less than seven-sixteenths of one inch in diameter, and bars or shapes of rolled iron not specially enumerated or provided for in this act, one and one-tenth cents per pound: *Provided*, That all iron in slabs, blooms, loops, or other forms less finished than iron in bars, and more advanced than pig iron, except castings, shall be rated as iron in bars, and be subject to a duty of eight-tenths of one cent per pound; and none of the iron above enumerated in this paragraph shall pay a less rate of duty than thirty-five per centum ad valorem: *Provided further*, That all iron bars, blooms, billets, or sizes or shapes of any kind, in the manufacture of which charcoal is used as fuel, shall be subject to a duty of not less than twenty-two dollars per ton.

6. Beams, girders, joists, angles, channels, car-truck channels, T T columns and posts or parts or sections of columns and posts, deck and bulb beams, and building forms, together with all other structural shapes of iron or steel, whether plain or punched, or fitted for use, three-fourths of one cent per pound.

7. Boiler or other plate iron or steel, except saw-plates hereinafter provided for, not thinner than number ten wire gauge, sheared or unsheared, and skelp iron or steel sheared or rolled in grooves, valued at two cents per pound or less, one cent per pound; valued above two cents and not above three cents per pound, one and two-tenths cents per pound; valued above three cents and not above four cents per pound, one and six-tenths cents per pound; valued above four cents and not above seven cents per pound, two cents per pound; valued above seven cents and not above ten cents per pound, two and eight-tenths cents per pound; valued above ten cents and not above thirteen cents per pound, three and one-half cents per pound; valued above thirteen cents per pound, forty-five per centum ad valorem: *Provided*, That all plate iron or steel thinner than number ten wire gauge shall pay duty as iron or steel sheets.

8. Forgings of iron or steel, or forged iron and steel combined of whatever shape, or in whatever stage of manufacture, not specially provided for in this act, two and three-tenths cents per pound: *Provided*, That no forgings of iron or steel, or forgings of iron and steel combined, by whatever process made, shall pay a less rate of duty than forty-five per centum ad valorem.

9. Hoop, or band, or scroll, or other iron or steel, valued at three cents per pound or less, eight inches or less in width, and less than three-eighths of one inch thick and not thinner than number ten wire gauge, one cent per pound; thinner than number ten wire gauge and not thinner than number seventeen wire gauge, one and one-tenth cents per pound; thinner than number seventeen wire gauge, one and three-tenths cents per pound: *Provided*, That hoop or band iron, or hoop or band steel, cut to length, or wholly or partially manufactured into hoops or ties for baling purposes, barrel hoops of iron or steel, and hoop or band iron or hoop or band steel flared or splayed, shall pay two-tenths of one cent per pound more duty than that imposed on the hoop or band iron or steel from which they are made.

10. Railway bars, made of iron and steel, and railway bars made in part of steel, T rails, and punched iron or steel flat rails, six-tenths of one cent per pound.

11. Sheets, of iron or steel, common or black, including all iron or steel commercially known as common or black taggers iron or steel, and skelp iron or steel, valued at three cents per pound or less: Thinner than number ten and not thinner than number twenty wire gauge, one cent per pound; thinner than number twenty wire gauge, and not thinner than number twenty-five wire gauge, one and one-tenth cents per pound; thinner than number twenty-five wire gauge, one and four-tenths cents per pound; corrugated or crimped, one and four-tenths cents per pound: *Provided*, That all common or black sheet-iron or sheet-steel not thinner than number ten wire gauge shall pay a duty as plate iron or plate steel.

All iron or steel sheets or plates, and all hoop, band or scroll iron or steel, excepting what are known commercially as tin plates, terne plates and taggers tin, and hereafter provided for, when galvanized or coated with zinc or spelter, or other metals, or any alloy of those metals, shall pay three-fourths of one cent per pound more duty than the rates imposed by the preceding paragraph upon the corresponding gauges, or forms, of common or black sheet or taggers iron or steel; and on and after July first, eighteen hundred and ninety-one, all iron or steel sheets when coated with tin, or lead, or with a mixture of which these metals, or either of them, is a component part, by the dipping or any other process, and commercially known as tin plates, terne plates, and taggers tin, shall pay three-fourths of one cent per pound more duty than the rates imposed by the preceding paragraph upon the corresponding gauges, or forms, of black sheet or taggers iron or steel.

13. Sheet iron or sheet-steel, polished, planished, or glanced, by whatever name designated, two and one-half cents per pound: *Provided*, That plate or sheet or taggers iron or steel, by whatever name designated, other than the the polished, planished, or glanced herein provided for, which has been pickled or cleaned by acid, or by any other material or process, or which is cold-rolled, shall pay one-quarter of one cent per pound more duty than the corresponding gauges of common or black sheet or taggers iron or steel.

14. Sheets or plates, of iron or steel, or taggers iron or steel coated with tin or lead, or with a mixture of which these metals, or either of them, is a component part, by the dipping or any other process, and commercially known as tin plates, terne plates, and taggers tin, one cent per pound until July first, eighteen hundred and ninety-one.

15. Steel ingots, cogged ingots, blooms and slabs, by whatever process made; die blocks or blanks; billets and bars and tapered or beveled bars; steamer, crank and other shafts; shafting; wrist or crank pins; connecting-rods and piston-rods; pressed, sheared, or stamped shapes; saw-plates, wholly or partially manufactured; hammer-molds or swaged steel; gun-barrel molds not in bars; alloys used as substitutes for steel tools; all descriptions and shapes of dry sand, loam, or iron-molded steel castings; sheets and plates not specially enumerated or provided for in this act; steel in all forms and shapes not specially enumerated or provided for in this act; all of the above valued at one cent per pound or less, five-tenths of one cent per pound; valued

above one cent and not above one and four-tenths cents per pound, six-tenths of one cent per pound; valued above one and four-tenths cents and not above one and eight-tenths cents per pound, eight-tenths of one cent per pound; valued above one and eight-tenths cents and not above two and two-tenths cents per pound, nine-tenths of one cent per pound; valued above two and two-tenths cents, and not above three cents per pound, one and two-tenths cents per pound; valued above three cents and not above four cents per pound, one and six-tenths cents per pound; valued above four cents and not above seven cents per pound, two cents per pound; valued above seven cents and not above ten cents per pound, two and eight-tenths cents per pound; valued above ten cents and not above thirteen cents per pound, three and one-half cents per pound; valued above thirteen cents and not above sixteen cents per pound, four and four-tenths cents per pound; valued above sixteen cents per pound, forty-five per centum ad valorem.

WIRE.

16. *Wire Rods.*—Rivet, screw, nail, fence and other iron or steel wire rods, whether round, oval, flat, or square in coils or loops or in any other shape, not smaller than number six wire gauge, valued at three cents or less per pound, six-tenths of one cent per pound; and iron or steel flat, with longitudinal ribs for the manufacture of fencing, valued at three cents or less per pound, six-tenths of one cent per pound; *Provided*, That all iron or steel rods, whether rolled or drawn through dies smaller than number six wire gauge, shall be classed and dutiable as wire.

17. *Wire.*—Wire made of iron or steel not smaller than number ten wire gauge, one and one-fourth cents per pound; smaller than number ten and not smaller than number sixteen wire gauge, one and three-fourths cents per pound; smaller than number sixteen and not smaller than number twenty-six wire gauge, two and one-fourth cents per pound; smaller than number twenty six wire gauge, three cents per pound; *Provided*, That iron or steel wire covered with cotton, silk, or other material, and wires or strip steel commonly known as crinoline wire, corset wire, or hat wire, shall pay a duty of five cents per pound; *And provided further*, That flat steel wire or sheet steel in strips, whether drawn through dies or rolls untempered or tempered of whatsoever width, twenty-five one-thousandths of an inch thick or thinner, ready for use or otherwise, shall pay a duty of fifty per centum ad valorem, and watch springs, shall pay a duty of sixty per centum ad valorem; *And provided further*, That no article made from iron or steel wire, or of which iron or steel wire is a component part of chief value, shall pay a less rate of duty than the iron or steel wire from which it is made either wholly or in part; *And provided further*, That iron or steel wire cloths, and iron or steel wire nettings made in meshes of any form, shall pay a duty equal in amount to that imposed on iron or steel wire used in the manufacture of iron or steel wire cloth or iron or steel wire nettings, and two cents per pound in addition thereto. There shall be paid on iron or steel wire, coated with zinc or tin or any other metal (except fence wire and iron and steel flat with longitudinal ribs for the manufacture of fencing) one-half of one cent per pound in addition to the rate imposed on the wire of which it is made; on iron wire rope, and wire strand, one cent per pound in addition to the rate imposed on the wire of which it is made; on steel wire rope and wire strand, two cents per pound in addition to the rates imposed on the wire of which it is made; *Provided further*, That all iron or steel wire valued at more than four cents per pound shall pay a duty of not less than forty-five per centum ad valorem, except that card wire for the manufacture of card clothing shall pay a duty of thirty-five per centum ad valorem.

GENERAL PROVISIONS.

18. No allowance or reduction of duties for partial loss or damage in consequence of rust or of discoloration shall be made upon any description of iron or steel, or upon any manufacture of iron and steel.

19. All metal produced from iron or its ores, which is cast and malleable, of whatever description or form, without regard to the percentage of carbon contained therein, whether produced by cementation, or converted, cast, or made from iron or its ores, by the crucible, Bessemer, Clapp-Griffiths, pneumatic, Thomas-Gilchrist, basic, Siemens-Martin, or open-hearth process, or by the equivalent of either, or by a combination of two or more of the processes, or their equivalents, or by any fusion or other process which produces from iron or its ores a metal either granular or fibrous in structure, which is cast and malleable, excepting what is known as malleable-iron castings, shall be classed and denominated as steel.

20. No article not specially provided for in this act, wholly or partly manufactured, made from tin plate, terne plate, or the sheet, plate, hoop, band, or scroll iron or steel herein provided for, or of which such tin plate, terne plate, sheet, plate, hoop, band, or scroll iron or steel shall be the material of chief value, shall not pay a lower rate of duty than that imposed on the tin plate, the tern plate, or sheet, plate, hoop, band, or scroll iron or steel from which it is made, or of which it shall be the component thereof of chief value.

21. On all iron or steel bars, rods, of whatever shape or section which are cold rolled, cold hammered or polished in any way in addition to the ordinary process of hot rolling or hammering there shall be paid one fourth of one cent per pound in addition to the rates provided in this act, and on all strips, or sheets, of iron or steel of whatever shape, other than the polished, planished, or glanced sheet iron or sheet steel herein before provided for, which are cold rolled, cold hammered, flued, brightened, tempered or polished by any process to such respected surface finish or polish better than the grade of cold rolled, smoothed only herein before provided for, there shall be paid one and one-fourth cents per pound in addition to the rates provided in this act; and on steel circular saw plates there shall be paid one cent per pound in addition to the rate provided in this act for steel saw plates.

Manufactures of Iron and Steel.

ANCHORS AND PARTS OF—

22. Iron or steel anchors, or parts thereof of iron or steel, mill-irons and mill-cranks of wrought iron, and wrought iron for ships, and forgings of iron or steel, or of combined iron and steel, for vessels, steam engines, and locomotives, or parts thereof, weighing each twenty-five pounds more of one and eight-tenths cents per pound.

23. Axles, parts thereof, axle bars, axle blanks, or forgings for axles, whether of iron or steel, without reference to the stage or state of manufacture, two cents per pound: *Provided*, That when iron or steel axles are imported fitted in wheels, or parts of wheels, of iron or steel, they shall be dutiable at the same rate as the wheels in which they are fitted.

24. Anvils of iron or steel, or of iron and steel combined, by whatever process made, or in whatever stage of manufacture, two and one-half cents per pound.

Blacksmiths' hammers and sledges, truck tools, wedges and crowbars, whether of iron or steel, two and one-fourth cents per pound.

25. Boiler or other tubes, or pipes, or flues, or stays of wrought iron or steel, two and one-half cents per pound.

26. Bolts, with or without threads or nuts, or bolt-blanks, and finished hinges or hinge-blanks, whether of iron or steel, two and one-fourth cents per pound.

27. Card-clothing, manufactured from tempered steel wire, fifty cents per square foot; all other, twenty-five cents per square foot.

28. Cast-iron pipe of every description, nine-tenths of one cent per pound.

29. Cast iron vessels, plates, stove-plates, andirons, sad-irons, tailors' irons, hatters' irons, and castings of iron, not specially provided for in this act, one and two-tenths cents per pound.

30. Castings of malleable iron not specially provided for in this act, one and three-fourths cents per pound.

Cast hollowware, coated, glazed or tinned three cents per pound.

31. Chain or chains of all kinds, made of iron or steel, not less than three-fourths of one inch in diameter, one and six-tenths cents per pound; less than three-fourths of one inch and not less than three-eighths of one inch in diameter, one and eight-tenths cents per pound; less three-eighths of one inch in diameter, two and one-half cents per pound, but no chains of any description shall pay a lower rate than forty-five per centum ad valorem.

CUTLERY.

32. Pen-knives or pocket-knives of all kinds, or parts thereof, and erasers, or parts thereof, wholly or partly manufactured, valued at not more than fifty cents per dozen, twelve cents per dozen; valued at more than fifty cents per dozen and not exceeding one dollar and fifty cents per dozen, fifty cents per dozen; valued at more than one dollar and fifty cents per dozen, and not exceeding three dollars per dozen, one dollar per dozen; valued at more than three dollars per dozen, two dollars per dozen; and in additon thereto on all the above, fifty per centum ad valorem. Razors and razor-blades, finished or unfinished, valued at less than three dollars per dozen, fifty cents per dozen; valued at over three dollars and not more than four dollars per dozen, one dollar and twenty-five cents per dozen; valued at more than four dollars per dozen, one dollar and seventy-five cents per dozen, and in addition thereto on all the above razors and razor-blades, thirty per centum ad valorem.

33. Swords, sword-blades, and side-arms, thirty-five per centum ad valorem.

34. Table knives, forks, steels and all butchers', hunting, kitchen, bread, butter, vegetable, fruit, cheese, plumbers', painters', palette and artists' knives of all sizes, finished or unfinished, valued at not more than one dollar per dozen pieces, ten cents per dozen; valued at more than one dollar and not more than two dollars, thirty-five cents per dozen; valued at more than two dollars and not more than three dollars, forty cents per dozen; valued at more than three dollars and not more than eight dollars, one dollar per dozen; valued at more than eight dollars, two dollars per dozen, and in addition upon all the above named articles thirty per centum ad valorem. All carving and cooks' knives and forks of all sizes, finished or unfinished, valued at not more than four dollars per dozen pieces, one dollar per dozen; valued at more than four dollars and not more than eight dollars, two dollars per dozen pieces; valued at more than eight and not more than twelve dollars, three dollars per dozen pieces; valued at more than twelve dollars, five dollars per dozen pieces, and in addition upon all the above named articles thirty per centum ad valorem.

35. Files, file blanks, rasps and floats, of all cuts and kinds: Four inches in length and under, thirty-five cents per dozen; over four inches in length and under nine inches, seventy-five cents per dozen; nine inches in length and under fourteen inches, one dollar and thirty cents per dozen; fourteen inches in length and over, two dollars per dozen.

FIRE-ARMS.

37. Muskets and sporting rifles, twenty-five per centum ad valorem.

38. All double-barreled, sporting, breech-loading shot-guns, valued at not more than six dollars each, two dollars each; valued at more than six dollars and not more than twelve dollars each, four dollars each; valued at more than twelve dollars each, six dollars each; and in addition thereto on all the above, thirty-five per centum ad valorem. Single-barreled breech-loading shot-guns, one dollar each and thirty-five per centum ad valorem. Revolving pistols, valued at not more than one dollar and fifty cents each, forty cents each; valued at more than one dollar and fifty cents, one dollar each; and in addition thereto on all the above pistols, thirty-five per centum ad valorem.

Iron or steel, sheets, plates, wares or articles enameled or glazed with vitreous glasses forty-five per centum ad valorem.

Iron or steel sheets, plates, wares, or articles enameled or glazed as above with more than one color or ornamented fifty per centum ad valorem.

NAILS, SPIKES, TACKS AND SO FORTH.

41. Cut nails and cut spikes of iron or steel, one cent per pound.

42. Horseshoe nails, hob nails, and all other wrought iron or steel nails, not specially provided for in this act, four cents per pound.

43. Wire nails made of wrought iron or steel, two inches and longer, not lighter than number twelve wire gauge, two cents per pound; from one inch to two inches in length and lighter than number twelve and not lighter than number sixteen wire gauge, two and one-half cents per pound; shorter than one inch and lighter than number sixteen wire gauge, four cents per pound.

44. Spikes, nuts and washers, and horse, mule, or ox shoes, of wrought iron or steel, one and eight-tenths cents per pound.

45. Cut tacks, brads, or springs, not exceeding sixteen ounces to the thousand, two and one-fourth cents per thousand; exceeding sixteen ounces to the thousand, two and three-fourth cents per pound.

46. Needles for knitting or sewing machines, and tape-needles and bodkins of metal, thirty-five per centum ad valorem.

47. Needles, knitting and all others not specially provided for in this act, fifteen cents per thousand.

PLATES.

48. Steel plates engraved, stereotype plates, electrotpye plates and plates of other materials, engraved or lithographed, for printing, twenty-five per centum ad valorem.

49. Railway fish-plates or splice-bars, made of iron or steel, one cent per pound.

50. Rivets of iron or steel, two and one-half cents per pound.

SAWS.

51. Cross-cut saws, eight cents per linear foot; mill, pit and drag saws, not over nine inches wide, ten cents per linear foot; over nine inches wide, fifteen cents per linear foot; circular saws, thirty per centum ad valorem; hand, back and all other saws, not specially enumerated or provided for in this act, forty per centum ad valorem.

52. Screws, commonly called wood screws, more than two inches in length, five cents per pound; over one inch and not more than two inches in length, seven cents per pound; over one-half inch and not more than one inch in length, ten cents per pound; one-half inch and less in length, fourteen cents per pound.

53. Wheels, or parts thereof, made of iron or steel, and steel-tired wheels for railway purposes, whether wholly or partly finished and iron or steel locomotive, car, or other railway tires, or parts thereof, wholly or partly manufactured, two and one-half cents per pound; and ingots, cogged ingots, blooms, or blanks for the same, without regard to the degree of manufacture, one and three-fourths cents per pound: *Provided*, That when wheels or parts thereof, of iron or steel, are imported with iron or steel axles fitted in them, the wheels and axles together shall be dutiable at the same rate as is provided for the wheels when imported separately.

MISCELLANEOUS METALS AND MANUFACTURES OF.

Aluminum or aluminum manufactured or in crude form or contained in alloys in which aluminum is the component material of chief value, 35 per centum ad valorem.

54. Antimony, as regulus or metal, three-fourths of one cent per pound.

55. Argentine, albata, or German silver unmanufactured, twenty-five per centum ad valorem.

56. Brass, in bars or pigs, old brass, clippings from brass or Dutch-metal, and old sheathing, or yellow metal, fit only for remanufacture, one and one-half cents per pound.

57. Bronze powder, fifteen cents per pound; bronze or Dutch-metal, or aluminum, in leaf, ten cents per package of one hundred leaves.

COPPER.

58. Copper imported in the form of ores, one and one-fourth cents per pound on each pound of fine copper contained therein.

59. Old copper, fit only for remanufacture, clippings from new copper, and all composition metal of which copper is a component material of chief value, not specially enumerated or provided for in this act, one and three-fourths cents per pound.

60. Regulus of copper and black or course copper, and copper cement, one and three-fourths cents per pound on each pound of fine copper contained therein.

61. Copper in plates, bars, ingots, Chili or other pigs, and in other forms, not manufactured, not specially enumerated or provided for in this act, two cents per pound.

62. Copper in rolled plates, called braziers' copper, sheets, rods, pipes, and copper bottoms, also sheathing or yellow metal of which copper is not the component material of chief value, and not composed wholly or in part of iron ungalvanized, thirty-five per centum ad valorem.

GOLD AND SILVER.

63. Bouillons, or cannetille, metal thread, file or gespinst, and epaulets, galloons, laces, knots, stars, tassels, and wings of gold. silver, or other metals, thirty-five per centum ad valorem.

64. Gold-leaf, two dollars per package of five hundred leaves.

65. Silver leaf, seventy-five cents per package of five hundred leaves.

LEAD.

66. Lead ore and lead dross, one and one-half cents per pound: *Provided*, That silver ore containing lead shall pay a duty of one and one-half cents per pound on the lead contained therein, according to sample and assay at the port of entry.

67. Lead in pigs and bars, glaziers' lead, lead wire, molten and old refuse lead run into blocks and bars, and old scrap-lead fit only to be remanufactured, two cents per pound.

68. Lead in sheets, pipes, or shot, two and one half cents per pound.

69. Metallic mineral substances in a crude state and metals unwrought, not specially provided for in this act, twenty per centum at valorem; mica, thirty-five per centum ad valorem.

NICKEL.

70. Nickel in ore, two cents per pound for the nickel contained therein.

71. Nickel in matte, or other crude form not ready for consumption in the arts, five cents per pound on the nickel contained therein.

72. Nickel, nickel oxide, alloy of any kind in which nickel is the component material of chief value, fifteen cents per pound.

73. Pens, metallic, except gold pens, twelve cents per gross.

74. Pen-holder tips, pen holders or parts thereof, and gold pens, thirty per centum ad valorem.

75. Pins, metallic, solid head or other, including hair-pins, safety-pins, and hat, bonnet, shawl, and belt pins, thirty per centum ad valorem.

76. Quicksilver, six cents per pound, flasks, bottles, or other vessels in which quicksilver is imported shall be subject to the same rate of duty as they would be subjected to if imported empty.

77. Type metal, one and one-half cents per pound for the lead contained therein; new types, twenty-five per centum ad valorem.

WATCHES.

78. Chronometers, box or ship's, and parts thereof, ten per centum ad valorem.

79. Watches, watch-cases, other than gold, watch movements, parts of watches, and watch-glasses, whether separately packed or otherwise, twenty-five per centum ad valorem; gold watches and gold watch-cases, forty per centum ad valorem.

ZINC OR SPELTER.

80. Zinc in blocks or pigs, one and three-fourth cents per pound.

81. Zinc in sheets, two and one-half cents per pound.

82. Zinc, old and worn out, fit only to be remanufactured, one and one-fourth cents per pound.

83. Manufactures, articles, or wares, not specially provided for in this act, composed wholly or in part of iron, steel, lead, copper, nickel, pewter, tin, zinc, gold, silver, platinum, or any other metal, and whether partly or wholly manufactured, forty-five per centum ad valorem.

VIRGINIA IRON NOTES.

The development of the iron industry in Virginia, as prodigious as it is, has only just begun. At Roanoke a large plate rolling mill is projected that will be the first of its kind inaugurated in the South. The proposed mill will roll plate from 9 inches to 8 feet in width, and from 20 to 50 feet in length. This, of course, includes boiler plates, sheets for furnace-work and plates for bridges, gas works, stand pipes, chimney stack iron, strip iron and every other grade of goods turned out by a first class mill. The capacity of the mill is to be 20 tons per day and the cost of the plant $100,000. The company which are organizing will be capitalized at between $150,000 and $200,000. It is stated that there a number of small iron industries that will be established at Roanoke after this mill gets in operation, and which will utilize the product of the mill in the manufacture of hardware, &c.

There is a strong likelihood of a rolling mill being established at Norfolk, which has an excellent location for such an industry, being geographically convenient to coal supplies, and with the pig iron very accessible. Parties from New Castle, Pa., are examining the situation for the establishment of a merchant rolling mill in connection with the manufacture of railroad spikes. The parties prospecting are the ones who built the De Bardel Eben furnaces at Bessemer, and 26 other plants through the South.

An iron furnace with a capacity of 1000 tons per week is to be built at Big Stone Gap.

The iron lands at Port Republic, recently bought from the Abbott Iron Company by the Grottoes Company, are being developed.

The contract has been let for the erection of the Glamorgan Company's machine shops at Lynchburgh.

Parties from Roanoke are to establish machine shops and foundry at Carnegie City.

A car works company is projected at Wytheville.

The contract has been let for the erection of a car works plant at Basic City.

Of the $200,000 capital stock in the new furnace company organizing at Wytheville, $125,000 has been subscribed.

Pittsburgh parties are prospecting at Big Stone Gap for the location of a 150 ton furnace.

Arrangements are being perfected at Glasgow for the erection by the Glenwood Furnace Company of two 100 ton furnaces.

A machine shop is being established by Charles Calona, at Berkley.

There are extensive plants preparing to be built at Waynesboro. Two 100 ton furnaces, a pipe works and a rolling mill by the Shenandoah and Kanawha Iron and Coal Company, and another furnace and a pipe works by the Crown Hill Splint Coal Company, of West Virginia.

Parties are organizing a furnace company at Rocky Mount.

At Roanoke the Oriental Cigarette Machine Company has been organized to operate the Luddington cigarette machine in Asia, Africa, Japan and Turkey. The officers are Wm. Lunsford, president; J. S. Simmons, vice-president; J. W. Shields, secretary and treasurer.

The machine shops of the Atlantic and Danville Railroad Company are to be moved from Belfield to Portsmouth. These shops give employment to 50 hands.

The Roanoke machine works at Roanoke now gives employment to 1400 operatives.

The National Farmers' Alliance Agricultural Works, employing between 300 and 500 hands, are to be located at Iron Gate. The negotiations were closed last week between the Iron Gate Company and a committee representing the Farmers' Alliance of the United States.

The Midland Virginia Steel and Iron Company recently incorporated by Senator Jno. W. Daniel, John H. Juman and others, contemplate the establishment of a Bessemer steel plant at Lynchburg or Roanoke. The company's capital stock is to be not less than $100,000 and not over $5,000,000.

The shops of the Norfolk and Southern Railroad Company, located at Norfolk, are to begin the manufacture of cars and are adding machinery for that purpose.

The Forest Land Company, which proposes to engage in mining and manufacturing, at Buena Vista, has been incorporated with J. T. Dunlap, president, and R. R. Witt, secretary and treasurer.

Capitalists from Pennsylvania have joined others from Virginia, and have formed a company at Radford, to build a furnace and other industries.

Parties at Wytheville are endeavoring to organize a rolling mill company.

The recently organized Manganese and Mineral Company, of Glasgow, have a capital stock of $2,000,000. They intend building a ferromanganese and spiegel furnace.

The Luster Mfg. Company, for the manufacture of curry-combs and conducting a general tinning and manufacturing business, were organized at Iron Gate, Va.

Negotiations are pending for the establishment of a blast furnace and structural iron works at Irongate, Va.

It is announced that the purchase of 30,000 acres of Indiana's best natural gas land by Ohio capitalists and manufacturers will result in making Chicago the distributing point for the largest daily output of plate-glass in the world. The Grand Pacific Hotel, Chicago, was last week the meeting place of the Ohio men, among whom were Colonel A. L. Conger, Colonel George T. Perkins, S. H. Miller and F. M. Atterholt. Together with several Chicago capitalists, they have taken a charter under the laws of Illinois, the amount represented being $2,000,000. They will at once proceed to build the largest factory of its kind in the world, the new factory being located at Elwood, Ind., while the old one, located for the past two years at Kokomo, Ind., will be greatly enlarged. The combined output of the two will amount to 20,000 square feet of plate-glass per day, the headquarters of whose distribution will be Chicago. The largest plant of the kind now in this country has an output of only about 200,000 square feet per month.

John D. Cheever, lessee of the Croton Magnetic mines, at Brewsters, N. Y., has ordered from the Davis Colby Ore Roaster Company, of 28 Platt street, New York, three large ore roasting kilns.

TRADE REPORT.

Chicago.

Office of *The Iron Age*, 59 Dearborn street, CHICAGO, April 2, 1890.

(*By Telegraph.*)

A further decline in prices of Pig Iron and other heavy products took place during the past week. The process of getting down to hard pan is going on very rapidly, and it hardly seems possible that it can continue much longer. Production will certainly be curtailed, and after that will come a reaction. Business has, of course, been checked to a certain extent, because buyers will not anticipate their requirements so long as there is a possibility of buying cheaper by waiting a little longer, but there are enough people who must buy to keep up quite a semblance of activity in numerous lines. The railroads are reported to be free purchasers, and manufacturing companies are also taking in stock to a considerable extent. The dark side of the picture is the depressed condition of agriculturists, and until they are more prosperous there will be more or less halting in numerous branches of trade in this section.

Pig Iron.—Pig Iron business is by no means stagnant, but it is largely in the hands of sellers of Southern Coke Irons. They have reduced prices far below the rates, which Northern furnaces are willing to make. Some Southern companies, however, seem to have had enough of low prices for the present, and are now asking 50¢ more than they named last week. Numerous sales are reported of lots ranging from 100 tons. Outside lots of American Scotch have been offered at $19.50, without effecting sales, but makers are very firm. Sales are being made to Canadian consumers, and the prospects are excellent for continued business in that direction, and some 3000 tons of Lake Superior Charcoal were sold at $21.50 for delivery from June to December, the buyers believing that at that price they were safe in securing a supply. Cash quotations are as follows, f.o.b Chicago:

Lake Superior Charcoal	$21.50 @ $22.00
Local Coke Foundry, No. 1	18.00 @ 18.50
Local Coke Foundry, No. 2	17.00 @ 17.50
Local Coke Foundry, No. 3	16.50 @ 17.00
Bay View Scotch	18.00 @ 18.50
Am. Scotch (Strong Soft), No. 1	20.00 @ 20.50
Jackson County, Soft and Silvery, No. 1	18.00 @ 19.00
Southern Coke, No. 1	16.50 @ 17.00
Southern Coke, No. 2	16.00 @ 16.50
Southern Coke, No. 3	15.50 @ 16.00
Southern Gray Forge	15.00 @ 15.50
Southern Mottled	14.50 @ 15.00
Tennessee Charcoal, No. 1	20.00 @ .....
Alabama Car-Wheel	24.00 @ 25.00
Bessemer	21.50 @ ...

Bar Iron.—Orders have been scarce for some time but railroads are about to buy more cars, and if local builders secure the contracts a heavy demand will be precipitated for Bars and Axles. Youngstown mills are quoting 1.65¢ @ 1.70¢ at mill, but local makers quote 1.75¢ @ 1.80¢, half extras, Chicago, shading on good specifications. Much cutting is reported on Axles. Bars from store sell at 2¢ @ 2.10¢, and jobbers report a very good trade in a small way.

Plates, Tubes, &c.—In Plates quite a brisk business was enjoyed, especially in sales from stock, although this was partly due to special efforts made by some sellers to push transactions. A contract was taken for over 300 tons of heavy pipe. Prices on mill lots are irregular but the ordinary carload trade moves at about following rates: Tank Iron, 2.55¢ @ 2.60¢; Tank Steel, 2.70¢; Iron Sheets, Nos. 10 to 14, 2.60¢ @ 2.70¢; Steel Sheets, 2.80¢ @ 2.90¢. Store prices are as follows: Nos. 10 to 14 Iron Sheets, 2.90¢ @ 2.95¢; do Steel, 3.15¢ @ 3.25¢; Tank Iron, 2.65¢ @ 2.75¢; Tank Steel, 2 90¢; Shell Iron or Steel, 3.25¢; Flange Iron, 4¢; Flange Steel, 3.50¢; Fire Box Steel, 4.75¢ @ 5.5¢; Ulster Iron, 3.75¢; Boiler Rivets, 3.75¢ @ 4.25¢; Boiler Tubes, 45% off for small and 50% off for large sizes.

Sheet Iron.—Inquiries are very light. A sale of No. 27, first-class make, reported at 3.15¢, at mill, but ordinary grade can be bought below 3¢. Small lots are quoted 3.40¢.

Galvanized Iron.—Sellers report March the largest month they ever had. Cornicemakers are among the heaviest buyers, but jobbers have also been steady purchasers. Prices are steady on standard makes. From stock small lots are selling at 62½% off.

Merchant Steel.—Prices are without change, mills holding agents very stiffly. Trade for March has been found to be quite up to the average, although for a time there was much complaint about dullness. Mill lots are quoted as follows, Chicago: Toe Calk and Open-Hearth Spring, 2.75¢ @ 2.85¢; Open-Hearth Machinery, 2.65¢ @ 2.90¢; small lots from store Bessemer Bars, 2.50¢ rates; Toe Calk and Spring, 3¢ @ 3.25¢; Open-Hearth Machinery, 2.75¢ @ 3¢; Tool Steel, 7.5¢ and upward; Crucible Sheets, 7¢ @ 10¢.

Steel Rails.—In Steel Rails, from a Western standpoint, further recession in price would seem to be unnecessary. The capacity for production here is heavily curtailed at present by the overhauling of the South Chicago mill, which will hardly be finished for two months. The Illinois Steel Company that claim it will then be the finest Rail mill in the world. Orders now in hand will absorb the capacity of other mills here until far in the summer. It is reported that large orders have been refused for considerable quantities of Rails because deliveries could not be made in time required. This should be comforting to Eastern mills now naming very low prices on what they regard as competitive business between the East and West. Prices range from $35 to $36, according to quantity and time of delivery. Splice Bars are still in demand and on straight orders mills quote: 1.95¢ @ 2¢ for Iron, and 2.10¢ for Soft Steel; Spikes are quoted: $2.25, Square Nut Bolts 2.90¢ @ 2.95¢; Hexagon Nuts 3¢ @ 3.05¢.

Old Rails and Wheels.—Old Iron Rails have been sold at $23 in the interior, but are now a little firmer, and sellers ask $23.50 @ $24 Chicago. Consumers are showing more interest and inquiries are increasing, while the visible supply is not large. Old Steel Rails have not recovered from the decline. Some dealers quote short pieces at $20, but others say they are not worth over $18. Long lengths probably command $21. Car wheels are again quiet, and nominally worth $19 @ $19.50.

Scrap.—The Scrap trade is utterly lifeless, even Steel being without movement. Dealers quote selling prices as follows, net ton: No. 1 Forge, $18.50 @ $18.75; No. 1 Mill, $14.50; No. 2 Mill, $10; Fish Plates, $21; Pipes, $13.50; Axles, $23.75; Machinery, Cast, $13.50; Cast Borings, $9; Wrought Turnings, $13; Stove Plate, $10.50; Mixed Steel, $15; Coil Steel, $17; Leaf Steel, $18; Tires, $20; Horseshoes, $18.50.

Hardware.—Leading Hardware jobbers are doing a very good business, despite the depressed condition of the farming interest, which is probably overcome by the immense territory which they cover. Those jobbers handling a strictly local trade complain of more or less dullness. Shelf goods are very firm and evidently do not sympathize with the decline in raw material. Conservative buyers who are carrying low stocks in anticipation of a decline have been obliged to buy against their inclinations to meet the wants of their trade. The Heavy Hardware trade is somewhat irregular, more business going to some houses than others.

Nails.—The condition of the Nail market is a knotty problem; hardly two sellers agree on the current price. Mills quote $2 at works for Cut Steel Nails, but that seems to be merely a starting point for negotiations. How much it can be shaded depends on the character of the order. Very low sales are reported to have been made by local jobbers, who were desirous of reducing their stocks. In small quantities Cut Steel Nails can be bought at $2.25 @ $2.30. Wire Nails are in better demand again, frequent orders being received for sorting up. Large quantities are not wanted just now to any extent. Manufacturers quote $2.50 at factory, while jobbers are selling small lots at $2.80 @ $2.85.

Barb Wire.—Barb Wire is easier, but without any quotable change. The expected increase in the demand has not been felt yet. Small lots of Painted sell at 3.25¢ and Galvanized 3.85¢.

Pig Lead.—Pig Lead was more active, some 500 tons selling at the rate of 3.80¢ for Common and 2½¢ @ 5¢ more for Refined Corroding, on which the market is quite firm.

A. C. Hawes, who has been long connected with the Pig Iron trade of the Northwest, and Ambrose Cramer, who has been manager of the Crane Company's Malleable Cast Iron Foundry for the past eight years, have formed a partnership under the style of Hawes & Cramer, to conduct a Pig Iron commission business, and will maintain an office in the Phenix Building, Chicago. They have already secured a number of direct agencies for first-class furnace companies, embracing some making a specialty of high Silicon Iron, and will also handle Rainey Connellsville Coke.

Green & Schimberg, wholesale Scrap Iron and Metal dealers, located at 112 West Harrison street, Chicago, are opening a new yard at Fortieth street and Stewart avenue, which will have greatly improved facilities. Tracks are being run into the yard, which will establish a direct connection with all the railroads centering at Chicago, thus enabling the firm to receive and ship by rail without rehandling by team. The advantages thus secured will permit them to conduct their business on a much larger scale and more in accordance with the progress of the times.

Louisville.

LOUISVILLE, KY., March 31, 1890.

The decline in the present market has been so unexpected and unusual as to excite great surprise among buyers, and presents features that have not occurred before in Iron circles. There is a market for Iron and large sales will probably be effected, but the price is so low that some furnaces will not consider it wise to enter into competition with the larger companies at the present time. Sales in car lots on basis of $10.50 for Gray Forge at furnace have been made, and Iron can be bought freely on this basis. It would seem wisdom on the part of purchasers to buy as much Iron as possible for long deliveries immediately, as the moment a few large sales that are now under consideration have been consummated, furnaces that have sold will not be inclined to offer more Iron on the present basis. Already some are assuming the policy of selling for but three months, and others will not enter into competition with those offering Iron on the present basis, which is within

$1 of the lowest price at which Gray Forge has ever sold south, and this was an exceptional sale not participated in generally. During the last decline when the market was as low if not lower than at any time in its history, the average sales were not lower than $10.25 for Gray Forge. Those who think they can buy for less will certainly be disappointed in many cases, for while the market may go lower a few large sales will cause a sharp reaction of probably a dollar. As manufacturers appear to want Iron in many instances and stocks have run low, owing to the very slight buying during the last four months, the news of heavy purchases on the part of leaders will result in many eager but disappointed buyers, as furnaces cannot afford to sell freely at present prices. Current quotations are as follows:

Southern Coke, No. 1 Foundry (new classification)	$15.50 @ $16.00
Southern Coke, No. 2 Foundry (new classification)	15.00 @ 15 50
Southern Coke, No. 3 Foundry (new classification)	14.50 @ 15.00
Gray Forge	14.00 @ 14.50
White and Mottled, different grades	13.25 @ 13 75
Silver Gray, different grades	14.00 @ 15.00
Southern Charcoal, No. 1 Foundry	17.25 @ 18.75
Southern Charcoal, No. 1 Mill	16.00 @ 17.00
Southern Car-Wheel, standard brands	23.00 @ 24.00
Southern Car-Wheel, other brands	18.50 @ 21.00
Hanging Rock Coke, No. 1 Foundry	16.75 @ 17.75
Hanging Rock Charcoal, No. 1 Foundry	20.75 @ 21.25
Hanging Rock, Cold Blast	22.25 @ 24.25

Chattanooga.

Office of *The Iron Age*, Carter and 9th Sts., CHATTANOOGA, March 31, 1890.

Pig Iron.—The past week has developed the intimations made in our last report touching the condition of the market. Prices have advanced from 50¢ to 75¢ ℔ ton, and some of the furnaces are still holding off for a little better price. Inquiries are more frequent, and there is a good deal of activity in the movements of Iron. Quite a number of the furnaces have oversold themselves for immediate delivery, and some of the sales made are considerably behind-hand in shipment. It seems to be the general opinion that prices have now reached the bottom figure, and whatever change there may be in future will be an advance. In the past ten days there have been some very heavy shipments, and the prospect now is that the demand on the furnaces will be up to their fullest capacity. The last edition of the rate sheet shows a decline to New York, the rate now being $4.15 from Chattanooga. The furnace at Fort Payne is nearly ready to blow in, and the company have very recently broken ground for another furnace. The number of new furnaces in the South which are under construction and which have not yet been blown in, with those that are about to commence construction, is 28. All of these expect to blow in the present year or the beginning of next year.

Detroit.

WILLIAM F. JARVIS & Co., under date of March 31, 1890, say: The market for nearly every grade of Foundry Iron has been very active during the past week, some large purchases having been made, and other large ones are still to be made during the present week, as it is believed that the market has touched bottom. The effect of the recent purchasing has not yet been seen, and the market is as low as it was a week ago and perhaps a trifle weaker in spots. Lake Superior Charcoal has finally shown some sympathy in the general decline, but not such a degree as the other grades of metal. Practically it may be said to be off $1 ℔ ton from the highest point. There were several large transactions during the past week for this grade of metal, notably two deals covering delivery for the balance of the present year, at full market quotations. It is believed by many that a reaction will soon take place in Foundry grades, and that the case from now on will be upward, rather than downward. When it is considered that the cost of making Iron in the South as a rule is not far from $11 ℔ ton, the present market here must be bottom. The speculators have been almost entirely driven out of the market, and this great cause of uncertainty in prices will be removed. The market is quotable to-day as follows:

Lake Superior Charcoal, all numbers	$21.50 @ $22.50
Lake Superior Coke Bessemer	21.00 @ 22.00
Katahdin (Maine Charcoal)	26.00 @ 26.50
Lake Superior Coke Foundry, all ore	19.50 @ 20.50
Lake Superior Coke Foundry, cinder mixed	18.75 @ 19.50
Standard Ohio Blackband	19.75 @ 20.50
Southern No. 1	18.00 @ 18.50
Southern Gray Forge	16.25 @ 16.75
Jackson County (Ohio) Silvery	19.25 @ 19.75
Old Car-Wheels (nominal)	20.00 @ 21.00

Philadelphia.

Office of *The Iron Age*, 220 South Fourth St., PHILADELPHIA, Pa., April 1, 1890.

The condition of the Iron trade is not at all what was generally expected three months ago. The demand has been slow and at gradually receding prices, and as compared with the opening quotations in January, declines will be found to average $1 ℔ ton on Pig Iron, $2 on Muck Bars, $5 @ $7 on Steel Billets, $2 @ $3 on Bar Iron, $4 on Plates, $2 @ $3 on Angles, and about $1 on Steel Rails. The heaviest decline is in Old Material, T-Rails having sold at $4 ℔ ton less than prices ruling during the early part of January. Scrap Iron averages $2 @ $3 ℔ ton lower than it was three months ago. In one sense the decline is not as serious as the figures might indicate, inasmuch as the prices ruling during January and February were nominal, more than real. The mills were filled up at probably something near to-day's prices, and were not then in a position to accept large orders, so that most of the business was in small lots. As a matter of fact business is being renewed to-day at just about the figures ruling during the last quarter of the year. That is, buyers are beginning again where they left off. Unfortunately for the manufacturers, cost is on a higher plane, so that the position is a most unenviable one. The consequence is that higher prices or a lower cost must be obtained before long. At present the feeling is in favor of the former alternative; at any rate an attempt will be made in that direction, and if that fails there is no other course than to reduce cost. Three months ago, under the Philadelphia heading, the following remarks were made, and as they are equally suggestive to-day, we repeat them: "The coming year is expected to be far more than an average one, so that the indicated supply of nearly 9,000,000 tons may be none too much after all. In some quarters there is either a real or an assumed fear of scarcity, but was there ever a time when Iron was so scarce that it could not be had? The usual experience is in the other direction, and there is no reason to expect serious scarcity during 1890. The increased demand has been easily met so far, and will doubtless be met just as easily in the future, and every dollar advance will be that much preminm for a still further supply."

Pig Iron.—The market has been somewhat more active during the last few days, and from present indications is likely to be more confirmed in the near future. Consumers are beginning to need Iron, but the irregularity in prices is so confusing that it is difficult to fix on any definite figure as being absolutely the lowest at which business can be done. There is in some cases a variation of a full $2 per ton in quotations of both Mill and Foundry Irons. For instance, $18 has been quoted for good No. 1 Southern, while $20 is the price for best Pennsylvania Irons. Mill Irons have been quoted as low as $15.50 for Southern, while $17.50 is the figure for best local brands. The bulk of the business has, of course, been at medium figures, say $16.50 to $17 for Forge, $17.50 to $18 for No. 2 Foundry, and about $19 for No. 1. But before consumers will place large orders they want to be sure that they are getting the best value for their money, which, with so many different prices, is no easy matter to determine. It may be pretty confidently assumed, nevertheless, that $16.50 to $17 for Mill Irons and $19 for No. 1 Foundry are safe quotations for a buyer. Anything specially choice may be expected to command an additional 50¢ to $1 more, while in the case of large lots, new brands, Southern Irons or undesirable deliveries, a reduction to the same extent will be very generally insisted upon. The chances are, however, that prices will settle down at the medium figures named, and that the specially low priced lots will be picked up by large buyers, and the market gradually relieved of the pressure which has been upon it for some weeks past. On the whole, the trade is inclined to expect an improving market during the quarter of the year upon which we have just entered, and more or less of a return toward the quotations current at the closing of 1889.

Bessemer Iron.—Buyers are in the market at about $20 at furnace for round lots, but makers hold at from $20.25 to $20.75 and are not desiring business for any but deliveries within the next 60 or 90 days. The feeling among holders is that a heavy demand may be expected in the near future, and that in any event current rates are as low as will be met with for some time to come.

Spiegeleisen.—Very little demand at present, and prices are a trifle weak. Sellers quote $34.50 @ $35, duty paid for 20 %, but for the present buyers are not inclined to make bids for large lots.

Ferromanganese.—There is not much demand, and sellers quote $85 @ $88 for 80 % duty paid, price according to quantity and date of shipment.

Steel Rails.—The market remains in a somewhat unsettled condition, with more or less cutting in prices reported in the West. Eastern mills are fairly supplied with orders for some time to come, and are not inclined to quote below $34 @ $34.50 at works, at which figures several lots have been taken during the past week or ten days. There is a moderate inquiry, particularly in the West, and prospects for full employment are considered encouraging.

Billets.—The market is more settled than it was two or three weeks ago, and prices are difficult to quote with exactness. Probably $31, delivered, would be accepted on a firm offer for a round lot with prompt specification, but $31.50 @ $32.50 would be asked for small lots, but all depends on circumstances.

Blooms.—Prices about $52 @ $53 "℔ Bloom ton" for Hot-Blast Charcoal, and $54 @ $55, delivered, for Cold-Blast. Runout Anthracite, $44 @ $45, and Scrap Blooms, $35 @ $36, delivered in consumers' yards.

Bar Iron.—There is some little improvement in the demand, and prices are firm at the figures quoted a week ago. The best makers quote 1.90¢ @ 1.95¢, and it is only in very exceptional cases that the inside figures is shaded. The general impression is that the market will become very active in the near future, and while

business is sharply competed for, there is no disposition to fill up for more than 30 or 60 days ahead. For the present orders are mostly for early delivery, and at the figures above quoted.

Muck Bars.—There is a little more inquiry, but prices are weak and lower. In some cases $29 at mill has been accepted, while others hold for $29.50 @ $30, but to secure immediate orders $29 at mill or $30, delivered, would be a full quotation. Sellers say that the inside figure is rock bottom, unless a corresponding reduction can be secured in cost of production.

Skelp Iron.—The demand is for small lots only, and prices show very little rallying power at present. Grooved Skelp is nominally 1.85¢ @ 1.90¢, delivered, and Sheared 2.05¢ @ 2.15¢.

Plates.—The demand is not large, but small orders have been sufficiently numerous to help the mills considerably, and with the prospect of larger business in the near future, prices, if not strong, are at least uniformly firm. Some low-priced orders were taken during the last two weeks of March, and while they might possibly be duplicated for something very desirable, it is felt that no further concessions need be looked for under present conditions. Prices are about as follows for small lots delivered:

	Iron.	Steel.
Tank	2.20 @ 2.25¢	2.50 @ 2.60¢
Bridge Plate	2.25 @ 2.30¢	.....
Shell	2.40 @ 2.50¢	2.80 @ 3.00¢
Flange	3.15 @ 3.25¢	3.10 @ 3.20¢
Fire-Box	3.75¢	3.75 @ 4.25¢

Structural Material.—The demand for small lots is fair and mills hold their own at unchanged prices. Low figures have been accepted in one or two special cases, but it is expected that with the improved demand usual at this season, there will be no difficulty in maintaining quoted rates, which are about as follows: 2.25¢ @ 2.30¢, delivered, for Universal Plates; 2.20¢ @ 2.25¢ for Iron Bridge Plate; 2.20¢ @ 2.25¢ for Angles, with 15¢ @ 20¢ more for the same in Steel. Tees, 2.7¢ @ 2.8¢; Beams and Channels, 3.1¢ for either Iron or Steel.

Sheet Iron.—A slight dullness is noted in this department, but mills are in such good condition that a few weeks of inactivity will hardly be noticed. Prices are steady at the following quotations for carload lots:

Best Refined, Nos. 14 to 20	3.00¢ @ 3.10¢
Best Refined, Nos. 21 to 24	3.20¢ @ 3.30¢
Best Refined, Nos. 25 to 26	3.40¢ @ 3.50¢
Best Refined, No. 27	3.50¢ @ 3.60¢
Best Refined No. 28	3.60¢ @ 3.70¢
Common, ¼¢ less than the above.	
Best Soft Steel, Nos. 14 to 20	3¼¢
Best Soft Steel, Nos. 21 to 24	3¾¢
Best Soft Steel, Nos. 25 to 26	3¾¢
Best Soft Steel, No. 27	4¼¢
Best Bloom Sheets, 1-10¢ extra over the above prices.	
Best Bloom, Galvanized, discount	60 %
Common, discount	62½ %

Old Rails.—There is nothing doing except once in a while carload lots are picked up in the interior at about $26 delivered. Seaboard lots are nominally about $25, but there are none here at present, so that quotations are entirely nominal.

Scrap Iron.—Business extremely slow, and buyers' ideas are 50¢ to $1 ℔ ton less than asking prices, which are about as follows: No. 1 Wrought, $22.50 @ $23.50 Philadelphia, or for deliveries at mills in the interior $23 @ $24; $16 @ $17 for best Machinery Scrap, $15 @ $15.50 for ordinary, $16.50 @ $17 for Wrought Turnings, $11 @ $11.50 for Cast Borings, and $26 @ $28 for Old Fish-Plates, and $18 @ $19 for Old Car-Wheels.

Wrought Iron Pipe.—No change from last week either in price or demand. Mills full of orders. At meeting of the association the present discounts were maintained, viz.: Butt-Welded Black, 47½ %; Butt-Welded Galvanized, 40 %; Lap-Welded Galvanized, 47½ %; Lap-Welded Black, 60 %; Boiler Tubes, 1¼ inches and smaller, 45 %; Boiler Tubes, 2 to 4 inches, 50 %; Boiler Tubes, 4½ inches and larger, 52½ %; Oil Well Casing, 50 %.

Nails.—Prices nominally $2 @ $2.05 for carload lots. The feeling is better, but without change in prices Customers who refused to buy last week have within a day or two placed orders at the figures then quoted. Both parties agreed that bottom has been reached, and any movement whatever will be a tendency to rise in price. The spring trade is in embryo as yet.

Pittsburgh.

Office of *The Iron Age*, Hamilton Building, PITTSBURGH, April 1, 1890.

Pig Iron.—The general situation remains much the same as noted in our last report. As it now stands furnacemen are little, if any, better off than they were a year or more ago, for while prices then were from $2 to $2.50 ℔ ton higher than they are now, this is more than offset by the enhanced cost of Coke, Ore and labor. It is true a good many furnacemen are still working on last year's Ore, but it will not be long until they will be obliged to commence on Ore bought this year, and which costs considerably more than that of last year. At the present time furnacemen, with the exception of those whose finances are close, are indifferent about selling, especially for future delivery; these, it is evident, are not only inclined to the belief that the lowest point has been touched, but are looking for a turn in the opposite direction. It would not require very much buying to turn the scales, as consumers generally are low in stock, and just as soon as a few commence to buy the rest will follow, and very likely many who are now refusing to buy a ton beyond their immediate wants now will be anxious to buy within a few weeks, and that, too, at an advance on present prices. It is worthy of mention that pretty much all the Iron in the hands of speculators has been unloaded, and having passed into the hands of consumers, will not come on to the market again, and there is now but little to bear in that direction. Speculators and furnacemen in straightened circumstances are very largely held responsible for the recent bad break in the market, and now that they are pretty well out of the way a much better feeling obtains. Prices, as compared with those of a week ago, have further declined, but, as already intimated, the feeling obtains that the lowest point has been almost, if not altogether reached. Bessemer has gone off much more than Mill, and there is but little if any more difference between the two than there was a year ago; the former has declined from $1 to $1.25 ℔ ton within the past week, while Mill Irons did not decline more than 25¢. Three or four months ago Bessemer brought from $5 to $6 ℔ ton more than Mill, whereas at present the difference is only $2.50 @ $3 ℔ ton. We quote prices as follows:

Neutral Gray Forge	$16.00 @ $16.50,	cash.
All Ore Mill	17.00 @ 17.50,	"
White and Mottled	15.50 @ 16.00,	"
No. 1 Foundry	18.50 @ 19.00,	"
No. 2 Foundry	17.50 @ 18.00,	"
No. 2 Charcoal Foundry	21.50 @ 22.00,	"
No. 1 Charcoal Foundry	23.50 @ 24.00,	"
Cold-Blast Charcoal	25.00 @ 30.00,	"
Bessemer Iron	18.50 @ 19.00,	"

In regard to Bessemer rumors obtain that sales have been made as low as $18, cash, but thus far they are not well authenticated. Some furnaces are refusing to sell good Forge Irons at $16.50, cash, but consumers have no trouble in obtaining all they want for present use at the price quoted, but it is doubtful whether a seller could be found for future delivery.

Muck Bar.—There has been an increased volume of business the past week, but no improvement in prices. Sales of some 2,000 tons reported at $28.25 @ $28.50. It is reported that sales have been made as low as $27.75 and $27.50, cash. It is expected that there will be an increased demand from now on, as some of the largest buyers and consumers are now on the market.

Manganese.—We are reported small sales of 80 % Ferro for immediate or nearby delivery at $95 @ $97 ℔ ton, while foreign is being offered for future delivery at from $8 to $10 ℔ ton below the above quotations. The demand is chiefly for small lots for immediate use, whereas there is but little foreign to be had for spot delivery.

Manufactured Iron.—The demand continues rather light, as large buyers continue to hold back in expectation of lower prices, but it is confidently expected that orders will be coming forward more freely within the next week or two if the weather is at all favorable for outdoor business. However, notwithstanding, business has been comparatively light of late, the mills are nearly all in operation, and some of them are reported working up to their full capacity. Prices remain about as last quoted: Bars, 1.85¢ @ 1.90¢; Plates, 2.30¢ @ 2.35¢; No. 24 Sheet, 2.90¢ @ 3¢; Grooved Skelp, 1.80¢ @ 1.85¢; Sheared do., 2.10¢ @ 2.15¢, all 60 days, 2 % off for cash. A considerably increased demand for Skelp Iron is confidently looked for this month and next.

Nails.—The Nail trade continues dull and unsatisfactory and prices are lower. Steel Cut Nails have been reduce to $2.15, 60 days, 2 % off for cash, in car lots, and it is rumored that sales have been made at Wheeling as low as $2. Wire Nails are also dull and prices are lower; we now quote at $2.60, 60 days, 2 % off for cash. However, notwithstanding the present dullness, the capacity for making Wire Nails continues to be increased, and it is evident that an improvement is expected, possibly at the expense of Cut Nails, although a good many of the Cut Nail manufacturers think that Cut Nails will in the end withstand the inroads made by the Wire Nail on account of being cheaper, and then its adhesive quality is deemed to be much better.

Structural Iron.—Business only fair, but it is hoped and expected that it will improve this month, as it usually does. No change in prices, although for a desirable order it is possible that our quotations would be shaded slightly. We have made several reductions within the past few weeks. Angles, 2.30¢; Tees, 2.75¢; Channels, 3.10¢; Sheared Bridge Iron, 2.80¢; Universal Mill Plates, 2.45¢; Refined Bars, 2¢.

Steel Plates.—There is nothing new to note; business continues light, but is expected to pick up as the season becomes more advanced. Prices continue easy, and on Flange and Tank we have made a further slight reduction. Fire Box, 4¼¢ @ 4½¢; Shell, 3¢; Flange, 3.20¢; Tank, 2.70¢.

Wire Rods—Continue slow and prices have further declined; we now quote Domestic at $49 @ $50 ℔ gross ton. There has been a decline of $3 to $4 per ton since the close of 1889, and there is no assurance that they will not go lower.

Merchant Steel.—There is only a moderate business, and prices continue offish. Tool Steel 8¢ and upward, according to quality and size of order; Crucible Spring Steel, 4¢; Open-Hearth, base sizes, 2½¢ @ 3¢; Bessemer Machinery Steel, 2.40¢; Tire Steel, 2.55¢.

Wrought-Iron Pipe.—There is a fair and increasing business. Some of the mills are now busy, and it is expected that they will be running pretty full before the close of the present month. As stated in our last report, the outlook is regarded as being favorable for an active trade before long, and already some pretty good-sized contracts have been placed. No change in prices. Discounts on Black Butt-Welded Pipe, 47½ %; on Galvanized do., 40 %; on Black Lap-Welded, 60 %; on Galvanized do., 47½ %; Boiler Tubes, 1¼-inch and smaller, 45 %; 2 to 4-inch, 50 %; 4-inch and larger, 52½ %; Casing all sizes, 50 %.

Old Rails.—There appears to be no demand whatever here for Old Iron Rails, and the last sales reported were at $25, delivered at mills in the Shenango and Mahoning Valleys. Old Steel Rails on time are neglected, although prices have been maintained better than for Iron Rails. We continue to quote at $22 @ $22.50 and $23, according to length.

Steel Rails.—There does not appear to be much inquiry, but it is expected that there will be later on. We continue to quote $33.50 @ $34, cash at mill. The reports appearing in some of the New York papers in regard to the competition between the Rail mills are somewhat exaggerated. The works of the Allegheny Bessemer Company are stopped to make improvements and repairs.

Billets and Blooms.—It begins to look as if the market for Bessemer Steel Billets had about touched hard pan. So far as we can learn, there have been no sales made below the prices quoted a week ago, $29 @ $30. It is said that the great proportion of the business for some weeks past has been done by middlemen unloading, and it is believed that nearly all the stock held by these has passed into the hands of consumers, hence there is a bitter feeling. So far as we can learn, manufacturers generally are refusing to sell below our quotations, although there was a sale made last week for delivery at an interior point, which, it is said, would not net the seller more than $28.50.

Railway Track Supplies.—Business is still reported light, and prices are weak but unchanged.

Old Material.—The demand continues light and prices weak. No. 1 Wrought Scrap at $21.50 @ $22, net ton; Car Axles, $28 @ $28.50, net ton; Cast Scrap, $15.50 @ $16, gross ton; Old Car-Wheels, $19 @ $20. Steel Bloom Ends $22.

(By Telegraph.)

A canvass among the brokers to-day showed no change in the Iron and Steel situation. There is a continued feeling of uncertainty all through. Some well-informed operators incline to the belief that a reaction is near at hand. A sale of 500 tons of Forge Iron is reported at $15.75, cash. It is said that city furnaces are offering to sell at $16, cash. In regard to Bessemer, there are many rumors but very little that is reliable. It is stated by some of the brokers that an offer of $18.00, cash, would probably be accepted, but no sales of standard brands have been reported as yet below $18.50 @ $18.75, cash. Bessemer Steel Billets appear to have steadied up with but few if any sellers under $29 @ $29.50. A sale of 500 tons of Old Iron Rails to a Mahoning Valley mill is reported at $24, delivered at mill, which is $1 ℔ ton off from sale of last week. All kinds of finished Iron and Steel weaker.

Howard, Childs & Co., Iron and Steel Factors, formerly of Room 5, Lewis Block, have removed to Room 705 in the Penn Building.

St. Louis.

OFFICE OF *The Iron Age*, 214 N. Sixth st., ST. LOUIS, March 31, 1890.

Pig Iron —Extreme dullness prevails in this department, and in the absence of sales prices are to a great extent purely nominal. The Southern furnaces have had to shade current prices to secure what few orders they received, and it is safe to say large buyers could almost name their own terms, but what prices they would be willing to pay is a hard question to answer, certainly not those ruling to-day. Reports from the furnaces indicate an enormous production, and it is useless to expect a reaction in prices, until the large buyers are heard from. The market as it now stands is in a sensitive condition, and the outlook for increased values is not as favorable as it was two weeks since. As a rule, agents are quite willing to shade prices, and it seems there is no chance of securing business unless by so doing The only feature that tends to brighten the situation is the fact that prices have declined so rapidly, that sellers are all of the opinion that bottom has been reached at one jump, and that a natural reaction can be confidently looked for. Should buyers gauge the market on the same basis, a lively demand will be in order, but as stated above it is needless to look for any decided improvement until the large buyers are heard from. The following quotations indicate at what ordinary sized lots could be bought at for cash, f.o.b., St. Louis:

Southern Coke, No. 1 Foundry,	$16.50 @ $17.00
Southern Coke, No. 2 Foundry,	16.00 @ 16.50
Southern Coke, No. 3 Foundry,	15.50 @ 16.00
Gray Forge	15.00 @ 15.50
Southern Charcoal, No. 1 Foundry	19.00 @ 19.50
Southern Charcoal, No. 2 Foundry	18.00 @ 18 75
Missouri Charcoal, No. 1 Foundry	18.75 @ 19.25
Missouri Charcoal, No. 2 Foundry	18.00 @ 18.50
Ohio Softeners	18.75 @ 19.50

Connellsville Coke, f.o.b. East St. Louis, $5.65; St. Louis, $5.80.

Bar Iron.—There is only a fair demand for Bar Iron, the depression in Pig Iron making itself felt in this department. Mills have finished up nearly all their old contracts and are now on the lookout to replenish their order-books, but find the figures offered by buyers lower than they are willing to accept. Small lots from store are quoted at 2¢. Lots from mill command from 1.82½¢ to 1.87½¢ f.o.b. St. Louis.

Barb Wire.—There is nothing in the way of improvement to notice in this connection. Trade is light and the card rate is shaded to secure orders. The following quotations show the basis on which sales are made: Painted, 3.35¢; Galvanized, 3.95¢; carload lots, 10¢ ℔ cwt. less than above prices.

(See Telegram Page 566.)

Albert Waycott, St. Louis, Mo., agent for the Springfield Iron Company, Springfield, Ill., has removed his offices from the seventh to the sixth floor of the Laclede Building.

Cincinnati.

Office of *The Iron Age*, Fourth and Main Sts. CINCINNATI, April 1, 1890.

(By Telegraph.)

Pig Iron—There is nothing of importance to report in the local Pig market for the past week. The range of prices has not been disturbed to any great extent and the volume of business has not been increased much. A number of long contracts have come in sight, but few have been consummated. The flow of small orders, however, has been steady, and the aggregate quite satisfactory to factors. Opinions regarding the situation have not changed essentially, but a belief in improvement in the near future is more general. That this is the conviction of furnaces is evident from the fact that they refuse to entertain offers running four to six months ahead, and some of them, too, are reluctant to accept orders for present delivery at the low price current. Producers have reason to believe that a few heavy orders from consumers would assist the market to rebound from the present low basis. On the other hand a few buyers affect to believe that a further decline of 50¢ to $1 ℔ ton will follow the present prices, especially as we are approaching the dull summer months, when consumers more than ever will be favored in continuing the holding off or borrowing policy, or at least will be induced to buy only from hand to mouth, in anticipation of further concessions on the part of furnaces. That this is the general impression among buyers, however, is not substantiated by the fact that several large transactions are being negotiated upon the present prices, current and quoted. That the consumption of Pig Iron is large and increasing is accepted by all. The present low prices have checked the development of new stacks. The country's production can be but little more than ample to meet requirements. Much of this, of course, depends upon the prices current, and the situation is closely observed. A hopeful, if not a more confident, feeling prevails among the trade at large. Northern Iron has yielded, in sympathy with the Southern product, but a firmer tone prevails at the close. The sale of 2400 tons mixed lots of Foundry and Forge Iron at about $14.60, cash all around, at St. Louis, is the only sale of importance in which Cincinnati is interested which has been reported during the week. We quote nominally:

Foundry.	
Southern Coke, No. 1	$15.50 @ $16.00
Southern Coke, No. 2	15.00 @ 15.50
Southern Coke, No. 3	14.50 @ 15.00
Ohio Soft Stone Coal, No. 1	16.50 @ 17.00
Ohio Soft Stone Coal, No. 2	15.50 @ 16.00
Mahoning and Shenango Valley	16.50 @ 17.00
Hanging Rock Charcoal, No. 1	20.00 @ 22.00
Hanging Rock Charcoal, No. 2	18.50 @ 19.00
Tennessee and Alabama Charcoal, No. 1	17.50 @ 18.50
Tennessee and Alabama Charcoal, No. 2	18.00 @ 18.50
Forge.	
Gray Forge	14.00 @ 14.50
Mottled Neutral Coke	13.50 @ 14.00
Car-Wheel and Malleable Irons.	
Southern Car-Wheel	22.50 @ 23.25
Hanging Rock, Cold Blast	21.50 @ 24.25
Lake Superior Car-Wheel and Malleable	22.50 @ 24.25

New York.

Office of *The Iron Age*, 66 and 68 Duane street, NEW YORK, April 2, 1890.

American Pig.—The New York market has continued in a very unsettled condition owing chiefly to the low offerings of Southern Iron by agents. While it is true that some of the furnaces have withdrawn from the contest, it is equally true that some of the leading producers have offered Southern Iron as low as $16.50 for No. 1 and $16 @ $16.25 for No. 2. These figures net the furnaces a shade over $12 at furnace, and are the same prices quoted from Western markets. It is a remarkable fact that thus the Southern furnaces have got down very near the lowest prices made during last summer. Buyers are holding off and are frightened, but it is clear that the bottom has been very nearly reached. Northern furnaces have not followed in the sharp break of the Southern producers. They ask $18.50 @ $19

for No. 1 and get it, when the founder is forced into the market. Lots in second hands of Southern Iron, to arrive and on the spot, are offered, and sacrifice sales are occasionally made. The time is evidently close at hand when large buyers will be able to make very advantageous purchases, since, so far as the Southern furnaces are concerned, the market is close to the lowest point.

Bessemer Pig.—We note sales to an Eastern Pennsylvania Rail mill of 4000 tons of Bessemer Pig, at $19.50 at furnace. Recently also a lot of 1000 tons of Foreign Special was placed with a New England open-hearth plant, at private terms, and for Pennsylvania delivery, 1000 of Domestic, 0.09 to 0.12 Phosphorus Iron, at $18.50

Spiegeleisen and Ferromanganese.—There has been some business in Spiegeleisen, two blocks being closed. Spiegel eisen is being offered at $33.50, but buyers' views are generally lower. English advices make the market at Liverpool steady, £5 being declined by makers. Ferromanganese is quiet at $82.50 @ $83 for forward delivery, and $90 @ $91 for early delivery.

Billets.—The market is very quiet and nominally $31 @ $31.50 at Eastern works.

Wire Rods.—We quote nominally $48 @ $49 at Eastern mill.

Steel Rails.—In the East the market remains dull and weak, with few transactions of any consequence. A number of sales of lots of 1000 tons have taken place at $34 at mill, which we quote nominally. The impression prevails that for desirable orders in large blocks, buyers could secure better terms. The heavy decline in Billets, which are relatively far lower than Rails, will have the natural tendency to cause those mills, which have done a large business in Soft Steel, to seek Rail orders more eagerly. In other words, the very feature in the industry, the demand for and the rise in Soft Steel last fall, which aided the Rail trade, now threatens to unsettle it. No movement of any consequence is reported from the West. The Colorado Coal and Iron Company have just closed a contract for 15,000 tons of Rails. English offerings of Steel Rails, being speculative lots, have been as low as £5. 15/, c.i.f. New York or Montreal lately. As yet, none of the Canadian business pending has been closed.

Plates.—The market is quiet, with Iron Plates quoted 2.25¢ @ 2.34¢ for Tank; 2.35¢ @ 2.44¢ for Shell; 3.4¢ @ 3.45¢ for Flange, and 3.75¢ @ 3.8¢ for Fire Box. Steel Plates remain 2.5¢ @ 2.55¢ for Tank; 2.7¢ @ 2.75¢ for Shell, and 3.75¢ @ 4¢ for Fire Box, according to quality. The matter of fixing a limit of sizes of what may be termed Ordinary Plates is now under consideration by the Plate Iron manufacturers, with a view of arranging a schedule of extra sizes above Ordinary. A meeting of the manufacturers of Plates for Structural purposes was held March 27, at Philadelphia, and the following schedule was formulated and is now under consideration preparatory to a future meeting.

ORDINARY SIZES.

Plates up to and Including 30 Inches Wide, Between 5-16 and 1½ Inches Thick.—Length not to exceed 45 feet; weight not to exceed 2500 lb.

Over 30 Inches Wide, Between 5-16 and 1 Inch Thick.—Length not to exceed 30 feet; width not to exceed 80 inches; weight not to exceed 2000 lb.

¼ Inch Thick.—Width not to exceed 72 inches; length not to exceed 20 feet.

3-16 *Inch Thick.*—Width not to exceed 60 inches; length not to exceed 15 feet.

And the following:

EXTRAS.

Length—For each additional 5 feet or portion thereof, 1-10¢ ₽ lb.

Width—For each additional 4 inches or portion thereof, 1-10¢ ₽ lb.

Weight—For each additional 500 lb or portion thereof, 1-10¢ ₽ lb.

Merchant Steel.—We quote Machinery, 2.35¢ @ 2.4¢; Tire, 2.35¢ @ 2.4¢, and Toe Calk, 2.4¢ @ 2.5¢.

Cotton Ties.—American mills quote $1.15 @ $1.20 at mill, for bundle of 50 lb, the freight to Southern points being still unsettled. It is probable that the foreign producers will make a sharp struggle for trade, with £8 ₽ ton as the price in England, and the duty at 35 % ad valorem. The delivered price is close to that quoted for Domestic. Importers quote $1.20 @ $1.30 at New Orleans.

Fastenings.—The market continues very dull, and in buyers' favor. Low prices have been made lately on Steel Splice Bars, which we quote 1.75¢ @ 2¢. Spikes are nominally $2.10 @ $2.20; Bolts and Square Nuts, 2.9¢ @ 3¢, and Bolts and Hexagon Nuts, 3.10¢ @ 3.15¢, delivered.

Financial.

The week has not been remarkably exhilerating in a business point of view. Beginning with a terrific cyclone in Louisville, which swept out of existence property valued at $2,000,000, not to speak of lives that were sacrificed; disastrous floods have inundated large sections of agricultural lands in the Mississippi Valley, and from all directions, especially the West, there come complaints that transportation for heavy goods is well-nigh impracticable, except by rail, on account of the condition of the roads. Nevertheless, there is in New York a fair jobbing trade in several departments. Collections are not as good as could be wished, farmers representing that their products are unremunerative and money scarce. Even in San Francisco it is not remembered when collections were harder, "the farmer does not pay the storekeeper, the latter does not pay the wholesale." Crop exports are more cheerful, the recent freeze having done less injury than was supposed. Planting is progressing rapidly in Texas, Arkansas and in the unflooded districts of Mississippi and Louisiana. The Texas Agricultural Bureau reports the average in wheat increased 20 %. The Tariff bill was on Monday reported to the full Committee of Ways and Means, and the minority were given ten days to prepare their report. One of the principal features of the bill, in addition to those already noted, is the placing of hides on dutiable list at the rate of 15 % ad valorem. The new extradition treaty between this country and Great Britain, to take effect April 4, deprives all boodlers, embezzlers and such like of a convenient retreat in Canada. The New York Produce Exchange will receive no more grain quotations from the Chicago Board of Trade, but endeavor henceforth to make the New York price the standard in all markets. The total clearings of 50 cities for the week show a decrease of 4.6 % as compared with the same period last year. New York decreased 10.8 %, due to torpor in the speculative markets. Chicago gained 33.7, Pittsburgh 33.9, Denver 78.4, Louisville 15.4.

The Stock Exchange markets are unprecedentedly dull. The price of seats in consequence is said to have declined to $17,500, as compared with $30,500 a few years ago. The action of the coal companies in continuing the policy of restriction, by limiting the output for April to 2,000,000 tons, had only a temporary influence. News of the issue of $2,000,000 6 % Erie bonds for extension of terminal facilities explained the raid upon Erie stocks and bonds on Friday. Stop orders were reported to have caused the decline in Tennessee Coal and Iron. The only news from the West was encouraging, indicating a full attendance at the presidents' meeting called to reorganize the Interstate Railway Association.

United States bonds were quoted as follows:

U. S. 4½s, 1891, registered	103½
U. S. 4½s, 1891, coupon	103½
U. S. 4s, 1907, registered	122⅞
U. S. 4s, 1907, coupon	123⅛
U. S. currency 6s, 1895	116

The weekly statement of the associated banks was favorable, inasmuch as the local institutions added $915,250 to their reserve, increasing the amount held by them in excess of legal requirements to $4,331,675. The items show an expansion in loans of $1,046,400, a net gain in cash of $1,064,700, and an increase in deposits of $597,900. The stringency looked for by many in anticipation of the April settlements did not come. Time money was quoted: 5 % for all periods on prime collateral. Commercial paper quiet, with an improving demand. The best double-name paper is quoted at 5½ @ 6 %, with exceptional transactions at 5 %, and prime single-name at 6 @ 7 %. A flow of money toward this center from the West and South is supposed to be in the immediate future. The total disbursements during the month of April are estimated at $47,500,000. The total par value of bonds upon which interest is payable is $757,083,540, the interest amounting to $20,451,861. Dividends amounting to $11,122,089 are payable upon stocks having a par value of $683,481,740. The total railroad interest and dividend disbursements are thus $31,573,956. The Government pays, in addition, $6,000,000 of interest on the 4 %. It is understood from reliable authority that a number of Canadian banks in this city are making long-time loans, payable in gold. The reduction of the public debt during March will exceed $12,000,000, making the total reduction since June 30th last about $55,000,000.

The posted rates for bankers' sterling are $4.85 for 60 days and $4.87½ @ $4.88 for sight. The market is dull.

Bradstreet's of April 5 will print elaborate tables of the business failures in the United States and Canada for the first quarter of 1890, compared with the corresponding period of previous years. The total for the United States for the quarter just closed reaches 3326, against 3569 in 1889, the liabilities being $33,814,301, against $41,761,696 in 1889, and the actual assets $16,082,212, against $20,376,798. In Canada and the British Provinces the number of failures for the quarter has been 502, against 536 in 1889, with liabilities of $4,873,677, against $4,597,699. The number of failures shows the greatest decrease from 1889 in the Western and Southern States, while in the Middle States the increase is material. In the Eastern States the quarter's failures were 500, with liabilities of $4,640,290. In the Middle States the failures numbered 907, liabilities $11,962,443. The Southern States show 542, with liabilities of $4,659,474.

The east-bound all-rail shipments of dead freight from Chicago last week aggregated 91,485 tons, against 96,000 tons the previous week, and 56,974 tons the corresponding week of last year.

Conrad N. Jordan, president of the Western National Bank, has been succeeded by Boynton Ives, and Charles J. Canda resigned as vice-president. The Sixth National was restored to membership in the Clearing House. Charles F. Fairchild and Daniel S. Lamont are among the trustees of the Lestershire Boot and Shoe Company, of New York, which was incorporated with a capital stock of $600,000. Part of its business is to be conducted at Binghamton.

The merchandise markets show little animation. Breadstuffs of all grades,

weak, and spot wheat is offered at easier prices. Corn is easier; coffee is steady. Spot cotton easier and dull. Information from the overflow district continues of a more or less ominous character as regards the probability of serious delay in planting over a wide and important district. India-rubber is well supported at the recent advance, but is without activity. The distribution of leather is full and general. In provisions a good business on export account. Refined sugar is again lower and fairly active. Tobacco, light export trading. Ocean freights, irregular. At a meeting of the Trunk Lines Executive Committee in New York, on Tuesday, it was decided to maintain last year's rates—34¢ on first-class down to 20¢ on sixth-class, on 100 lb to Chicago.

Imports of merchandise at New York for the week were valued at $8,811,616. Total since January 1, $127,462,000, against $130,919,500 for the same time last year. Exports were $5,971,873, a total since January 1 of $87,981,000, as compared with $88,685,000 for the same time in 1889.

Western National Bank stock on Tuesday rose 4¼ @ 98½, 410 shares changing hands. The friends of the management were the reputed buyers.

Coal Market.

The Anthracite Coal market is not appreciably influenced by two meetings held during the past week, the first with reference to spring prices and the second to consider the proposed reduction of tolls. The sales agents simply decided to continue to restrict the product, but to issue no schedule, at least until later in the season. The April output is limited to 2,000,000, prices and demand to take their natural course. Respecting tolls, the Anthracite Coal carriers adjourned to April 10, without action, despite the clamor of individual operators in favor of a concession, who urge that carriers and producers should alike bear the burden of depression. The opening of navigation on the canals is expected to impart to the trade more life.

Stove and Egg are selling as low as $3.50, f.o.b., and Chestnut as low as $3.25, alongside. On the cars at Newburg or Highland prices are: Broken, $3.55; Egg, $3.65; Stove, $3.80; Chestnut, $3.70, by sail or rail. Pea sells anywhere from $2.85 to $3.10, alongside, and Buckwheat $2.25 @ $2.40.

Bituminous Coal is quoted at pool prices, $3.25, f.o.b.

The Reading Railroad Company report Coal tonnage for the year to March 29 1,937,303 tons, an increase of 16,563 tons. The Pennsylvania report for the same time 2,698,300 tons, an increase of 287,200 tons.

The Bureau of Anthracite Coal Statistics reports the following figures of production:

	March 22, 1890. Tons.	March 23, 1889. Tons.
Wyoming region	234,366	279,173
Lehigh region	100,534	88,963
Schuylkill region	138,134	159,976
Totals	473,034	528,112
Totals for year to date	5,648,1746,	289,053

The latest estimates of Anthracite Coal production for the current year are as follows: To April 30, 8,000,000 tons; for May and June, 4,200,000 tons; July, August, September and October, 18,000,000; November and December, 4,000,500 tons. This apportionment of the output is for the first four months of the year on the basis of 2,000,000 tons per month, which is the present limit, as agreed upon by the Anthracite companies. It is expected that the opening of canal navigation will increase the demand slightly, in consequence of orders which will be received from points which depend entirely on being supplied by water routes.

The Executive Committee of the trunk lines have arranged the following rates on Coal freight, to go into effect on May 1, from Scranton and other producing points in Pennsylvania: To Chicago, Louisville and Ludington, Mich., $4 ₱ ton; to Cleveland, $2.80, and to Pittsburgh, Erie and Buffalo, $2. The basis rate will be $4.60 a ton to Mississippi River points. This tariff is made for car lots of 12 tons or more, and is a trifle higher than the present tariff.

Metal Market.

Copper.—At the time of our last week's report the London quotation was cabled £48. 12/6, spot, and £48. 15/, futures; to-day it is respectively £48. 2/6 and £48. 10/, sales summing up 1675 tons during the interval. In our own market it appears bankers sold additional 2,000,000 pounds Lake to consumers, this time at 14¼¢. Our market has otherwise been quiescent at 14¼ @ 14½¢ Lake, 13¢ @ 13¼¢ Arizona, and 12½¢ @ 12¾¢ Casting Brands. On the latter the market is relatively weak. The heavy demand is for the best grades of Copper, making Lake scarce. This is probably due to the fact that the principal increase in the demand during the past six months has been for electrical purposes, for which Lake is principally used. It is probable that for a very desirable order for Casting Copper, sellers would make notable concessions. The large difference between Lake and this grade is certainly a noticeable feature. In their mid-monthly report of March 17, Messrs. James Lewis & Son, Liverpool, express themselves to the following effect: "The warrants for the 4000 tons of good merchantable Copper sold by the French holders early in the year have now been nearly all absorbed by consumers, and as the demand exceeds the arrivals, there seems great probability that the market will again advance to the level at which the French bankers will be willing to sell a further portion of their stock. Past experience will doubtless cause them to use more caution in their mode of sale, and to supply the demand without depreciating values. Stocks at present held by smelters and manufacturers must be exceptionally low and require to be replenished. An upward movement in prices would, therefore, most probably bring about a greatly improved demand." The import of American Copper into Liverpool and Swansea from January 1 to March 17, has been 4377 tons fine, as compared with 6647 same time last year, and 6288 in 1888. The Tamarack dividend paid April 1st, rounded out a grand total of $50,000,000 paid in dividends by the Lake Superior Copper Mining Companies since mining was begun, the Calumet and Hecla leading with a total disbursed to its stockholders of $33,350,000. Fourteen other mines bring the total up to $50,001,120. On the 1st inst. the visible supply in England and Erance was 91,920 tons, against 95,150 on March 1 last, and 124,885 on April 1, 1889.

Tin.—London cabled a week since £90. 5/ spot and £91. 5/ futures, the quotions to-day being the same, sales in the meantime aggregating 590 tons. In the New York market Tin has been dull, featureless and weak, the actual and prospective supply being ample to meet the moderate requirements of consumers. The visible supply in Europe and America on the 1st inst. was 14,700 tons, against 14,703 March 1, and 14,519 April 1, 1889. Spot Tin closes to-day at 20¼¢ @ 20.20¢. *Tin Plates.*—This market is again a shade lower, owing to disappointments as to the demand for current consumption coupled with lower offerings from the other side. A little oil business has been put through at a shade under $4.50 for 14 x 19¼. Stocks continue to accumulate in Wales, and, with the further break in Iron during the week, higher prices can hardly yet be looked forward to. We quote at the close, per box: Siemens-Martin Steel, Charcoal finish, $5.50 @ $6; Coke finish, $5 @ $5.25; Coke Tins, Penlan grade, $4.45 @ $4.50; J. B. grade, $4.55 @ $ 4.65, and Wasters, $4.30.

Lead.—This has been the dullest week so far in 1890, sales being restricted to 50 tons at 3.85¢, the nominal quotation at the close being 3.85¢ @ 3.90¢. St. Louis has been barely sustained, the tendency being downward, 3.72½¢ being asked and 3.70¢ offered.

Spelter.—Under this chapter, nothing very exciting can be placed on record for the week; a fair little jobbing trade has been transacted, the aggregate dealings not exceeding 100 tons at 5.10¢, which is the closing figure. Silesian gave way in London from £21. 2/6 to £21, and is worth 6¾¢ here.

Antimony.—A snug little business continues to be done, so far as the reduced stock will admit of, at 28¢ Cookson's, and 21¢ Hallett's brand.

New York Metal Exchange.

The following sales are reported:

THURSDAY, March 27.

10 tons Tin, July..... 20.10¢

FRIDAY, March 28.

20 tons Tin, May..... 20.10¢

SATURDAY, March 29.

10 tons Tin, per SS. France..... 20.10¢

The following officers, to serve for the ensuing year, have been elected at the New York Metal Exchange: President, Tallmadge Delafield; vice-president, Spencer A. Jennings; treasurer, Carl Meyer; secretary, Edward J. Shriver; managers, Morton B. Smith, Edmund Hendricks, William H. Davol, George Nissen, R. W. Thompson, N. L. Cort, W. I. Russel, William O. Loeschigk, Berthold Hochschild, Henry Schaefer, T. D. Hazard, S. H. Kohn, W. W. Van Voorhis and Robert Sentle. Arbitration Committee, John J. Williams, F. Langeloth, C. S. French, Fred. Steiner and U. O. Crane. Inspectors of Elections, William Hagan, George N. Frecker and J. Z. Demarest.

Imports.

Hardware, Machinery, &c.

Ankam, Herman, Mach'y, pgs., 8
Boker, Hermann & Co., Chains, cks., 14; Arms, cs., 54; Hdw., cs., 5; Mdse., cs., 8
Buchanan & Lyall, Mach'y, pcs., 5; cs., 20
Clark, G. A. & Bro., Mach'y, cs., 45
Coombs, W. H. & Co., Mach'y, cs., 82
Folsom, H. & D., Arms Co, Arms, cs, 22
Graf Cutlery Company, Cutlery, cs.
Hensel, Bruckman & Co., Mach'y, cs., 21
Hartley & Graham, Mdse, cs., 30
Lau, J. H. & Co., Arms, cs., 10
Morgan Engineering Co., Mach'y, case, 1
Riesthal, A. de & Co., Nails, cs., 41
Schoverling, Daly & Gales, Arms, cs., 40
Suzarte & Whitney, Mach'y, case, 1
Taylor, Thos., Mdse., cs., 5
Witte, John G. & Bro., Cutlery, cs., 13
Werlemann, H., Arms, cs., 36
Wiebusch & Hilger, Chains, cks, 28; Arms, cs., 16; Mdse., cs., 29
Zimmerman & Forshay, Mach'y, case, 1
Order—Guns, cs., 7; Mach'y, cs., 17

St. Louis.

(*By Telegraph.*)

Numerous inquiries for lots of from 200 to 500 tons are being received, and the present low basis of prices will undoubtedly influence large purchases. A sale of 2500 tons of Southern Iron, which included No. 2 Soft, Gray Forge and No. 3 Foundry, has just been consummated; terms private. This Iron is to be used in the manufacture of cable yokes.

British Iron and Metal Markets.

[*Special Cable Dispatch to The Iron Age.*]

LONDON, WEDNESDAY, April 2, 1890.

Speculative demand for Pig Iron Warrants have been slow and prices for Scotch went as low as 48/8 in the absence of supporting orders. Shipments have improved, however, and the withdrawals from stores have been heavy also, but these circumstances failed to promote confidence and the trading is still lifeless. The restriction upon the production of Hematites continues and more furnaces will shortly damp down, making a reduction in the output at about 20 %. This curtailment, it is understood, will be continued through the remainder of the year. Up to the present time, 13 furnaces have damped. One has blown out in Lincolnshire, leaving four blowing in that district. The Mossbay Iron and Steel Company, Workington, has suspended payment. The suspension is attributed to the entering of low price contracts last year on which a loss of about £14,000 was made. Warrants closed Tuesday at 48/11 for Scotch, 49/10 for Middlesbrough and 58/1 for Hematites. Business was done to-day at 48/6 for Scotch, 49/4½ for Middlesborough and 59/ for Hematites.

The demand for Tin Plates has been restricted, with few offers better than 14/3 for ordinary Cokes. The Liverpool market, as well as that at Swansea, is lifeless, and some eager sellers there have disposed of a few small parcels at fully 1/ below the rates generally quoted. Buyers and sellers views are very far apart.

Tin speculation has been rather more active and prices have had a good measure of support from demand based upon reports of probable lighter supplies East. There has been a steady good demand for consumption which was met by sellers freely. The Dutch sales realized an average of £112 for Banca and £111 for Billiton.

Continued scarcity of cash warrants led to an advance in Merchant-Bar Copper to £49 during the early portion of the week. The buying at the advance was moderate, however, and requirements not appearing large, offerings were freer the last few days and prices dropped sharply, going to £47. 10/. Speculation is tame at present, and there is little doing for consumption. French stocks have been reduced, owing in part to smaller quantities received from Chili and North America. Continental works are busy on old orders, but contracts for new work are coming in slowly.

Makers prices for nearly all descriptions of Pig Iron are lower, in sympathy with the decline in warrants and quotations for manufactured Iron are also lower, but there has been no further change on Rails or other Steel.

Cleveland Pig.—Makers' prices are 2/6 lower, in sympathy with warrants, and business is still moderate. No. 3 Mindlesborough at 50/, f.o.b.

Scotch Pig.—Lower prices are quoted for makers' brands, but business does not improve at the decline, and the demand continues slow.

No. 1 Coltness,	f.o.b. Glasgow	.....	71/6
No. 1 Summerlee,	" "	.....	70/
No. 1 Gartsherrie,	" "	.....	70/
No. 1 Langloan,	" "	.....	70/
No. 1 Carnbroe,	" "	.....	51/6
No. 1 Shotts,	" at Leith	.....	71/
No. 1 Glengarnock,	" Ardrossan	.....	70/
No. 1 Dalmellington,	" "	.....	62/
No. 1 Eglinton,	" "	.....	53/

Steamer freights, Glasgow to New York, 2/; Liverpool to New York, 10/.

Bessemer Pig.—There has been no improvement in the demand, but makers ask former prices despite the break in warrants. West Coast brands, Nos. 1, 2 and 3 quoted at 70/, f.o.b. shipping port.

Spiegeleisen.—Prices are about 5/ lower, but there is still a very fair demand. English 20 % quoted at 105/, f.o.b. at works.

Steel Rails.—Business has continued moderate and prices are without further change. Heavy sections quoted at £5. 15/ and light sections £6. 5/ @ £7, f.o.b. at N. W. England shipping point.

Steel Blooms.—The market very quiet and prices nominal. We quote £5. 10/ for 7 x 7, f.o.b. at N. W. England shipping point.

Steel Billets.—Demand is slow but prices are without change. Bessemer 2½ x 2½ inch, £5. 10/, f.o.b. at N. W. England shipping point.

Steel Slabs.—A small business passing and makers' prices the same as last week. Bessemer, £5. 15/, f.o.b. at N. W. England shipping point.

Old Rails.—There is very little business doing and all quotations are greatly nominal. Tees quoted at £3. 15/, and Double-Heads £3. 17/6, f.o.b.

Scrap Iron.—The demand is light and prices are without change. Heavy Wrought quoted £3. 5/, f.o.b.

Crop Ends.—Sales small and the demand light. Bessemer quoted £3. 5/, f.o.b.

Tin Plate.—There has been no improvement in the demand and prices are still unsettled. We quote, f.o.b. Liverpool:

IC Charcoal, Alloway grade	16/9 @ —
IC Bessemer Steel, Coke finish	— @ 15/6
IC Siemens " " "	— @ 15/9
IC Coke, B. V. grade	14/ @ 14/3
Charcoal Terne, Dean grade	14/3 @ —

Manufactured Iron.—Lower prices are quoted all along the line, but orders come in slowly and the market continues weak. We quote f.o.b. Liverpool:

	£ s. d.		£ s. d.
Staff. Marked Bars		@	9 10 0
" Common "		@	7 10 0
Staff. Bl'k Sheet, singles		@	9 15 0
Welsh Bars (f.o.b. Wales)		@	7 7 0

Tin.—The demand slow at present, but prices are held quite steady. Straits quoted at £90. 5/, spot, and £91 for three months' futures.

Copper.—A fairly active demand, and prices quite firm. Chili Bars quoted at £48. 2/6, spot, and £48. 15/, three months, futures; Best Selected, £55.

Lead.—There is little demand, and prices show slight change. Quoted at £12. 10/ for Soft Spanish.

Spelter.—Prices are somewhat lower, and the demand moderate. Quoted at £21 for Ordinary Silesian.

Foreign Markets.

EQUIVALENTS.

	Cents.
Franc, Peseta or Lira	19.3
Florin (Netherlands)	40.2
Florin (Austria)	35.9
Milreis (Portugal)	$1.08.
Milreis (Brazil)	54.6
Mark (Germany)	23.8
	Pounds
Kilogram	2.205
Picul	134.

BRAZIL.

PARA, March 25, 1890.—*India Rubber.*—Some 400 tons have been bought for New York at equal to 87½¢ ℔ lb.——*Per cable direct.*

CHILI.

VALPARAISO, January 31, 1890.—*Copper.*—Cable news being weaker, sales for the week have been restricted to 9576 quintals at $19.60 @ $19.65, f.o.b., which equals £48 11/1 in England, the bulk of receipts going to the latter country for account of smelters on consignment. *Coal* remains firm, English at 50/ on the spot and 45/ January sail; Australian, spot, 42/6; January sail, 38/; February 36/, and March 33/. *Exchange*, 90 days' sight on London, 25d @ 25⅛d.—*Weber & Co*

EAST INDIES.

COLOMBO, CEYLON, January 16, 1890.—*Plumbago.*—Our market has been moderately active and steady at the ensuing quotations in rupees ℔ ton: Large Lumps, 190 @ 230; Ordinary Lumps, 170 @ 210; Chips, 90 @ 120, and Dust, 60 @ 90 since Oct. Shipments have been distributed as follows in cwt., as compared with the previous year, the figures for 1890 and 1889 being set against one another: To England, 65,253, against 36,424; to Hamburg, 9574, against 4419; to Antwerp, 2884, against 3086; to Bremen, 368, against 659; to Australia, 53 against 88, and to the United States, 85,034, against 35,038, together 163,174, against 79,777 last year; 107,077 in 1888, and 83,072 in 1887. *Exchange.*—Six months' sight, on London, 1/5⅛.—*Volkart Bros., Ceylon and Malabar Coast, through their agent in New York, Mr. John W. Greene, 82 Wall street*

SPAIN.

BILBAO, March 8, 1890.—*Iron Ore.*—Our market during the week under review has been duller and weaker at 9/3 @ 10/3 for superior Rubios, and 8/ @ 9/3 inferior. Campanil is nominally worth 11/9 @ 12/. Shipments for the week reached 113,653 tons; since January 1, 824,304, against 779,507 same time last year and 724,031 in 1888. *Pig Iron*—1600 went abroad and 291 coastwise.—*Bilbao Maritimo y Comercial.*

SOUTH AFRICA.

CAPE TOWN, CAPE OF GOOD HOPE, February 2, 1890.—*Mining Shares.*—During the past two years 100 South African gold mining companies have been formed, of which only a dozen pay a dividend. The product has on an average been 40,000 ounces monthly, but in the majority of cases it was not a paying business. The stock capital of the companies named amounted to £7,100,000, and speculation had raised their joint value to £24,800,000 in February, 1889, whereas to-day it does not exceed £9,500,000, entailing an actual loss in a single twelvemonth is no less than £15,300,000. The Diamond Mining Companies' shares fared no better during the interval. The stock capital of the Diamond Companies was £5,300,000 in the aggregate. speculation arose then to £30,100,000, and the actual market value is £18,600,000. Among Diamond shares De Bears were prominent in the way of speculation. The share capital was £3,500,000; speculation raised the shares to £19,700,000, and the same are not now worth over £13,100,000, a difference in a year of £6,600,000.—*Argus.*

Leonard Everett, a well-known engineer and dredging contractor, died at Lockport, N. Y., March 18, aged 70 years. He was born at Canton, Mass. At the time of his death he was general superintendent of the American District Steam Company, which has plants all over the country.

W. F. Thorton, Iron and Steel commission merchant, and sales agent for the Midvale Steel Company, has removed to Rooms 602 and 603 of the Perry-Payne Building, Cleveland.

Hardware.

There has been some improvement in the volume of business during the past week, but trade is not at all active and many complaints are made of its dullness. There is, however, a fair amount of business doing, and sales will probably aggregate more than they are estimated. The condition of the Iron market and the weakness developed in some leading lines, as, for example, Wire, tend to shake the confidence of the trade in the firmness of prices, and buyers are accordingly very careful in placing orders, especially for goods in the prices of which advances were made in the past few months. There is more or less irregularity in the prices on many leading lines, and some of the prominent jobbing houses are understood to be cutting prices quite freely, apparently with a view to inducing orders and disposing of rather large stocks. At the present time in several lines leading jobbing houses both East and West are selling at lower prices than the goods could be replaced at. As this has considerable influence in lowering the tone of the market it is to be regretted. Manufacturers for the most part are pursuing a conservative course, and although many of them are up with their orders, they are as a rule maintaining prices with regularity; but notwithstanding this, it is evident that they are more desirous of effecting sales than during the past few months.

Cut Nails.

The New York market is quiet. Buyers fearing a further decline, are holding off, and are purchasing only for urgent requirements. We quote carload lots on dock $1.90 to $1.95 for Iron Nails.

Wire Nails.

The condition of the Wire Nail market is substantially the same as last week. The demand is moderate and prices irregular and low. Quotations are on the basis of $2.55 to $2.60 for carload lots at mill. The condition of the Wire market directly affects these goods, and in connection with the large production of the mills explains the low prices ruling.

Miscellaneous Prices.

The following are the prices of the American Axe and Tool Company, Pittsburgh, Pa., terms f.o.b., cars at factory, with a discount of 3 per cent. for cash in 30 days:

	Per dozen.
First quality bronzed Axes	$8.00
First quality bronzed Axes, beveled	8.50
All steel full-polished Axes	9.00
All steel full-polished Axes, beveled	9.50

Second quality Axes, 50 cents per dozen less.

	Per dozen.
First quality iron double Bitts	$13.00
All steel full-polished double Bitts	14.50

Second quality double Bitts, $2 per dozen less.

Beveled Axes, 50 cents per dozen extra.

Beveled double Bitts, $1 per dozen extra.

These prices are announced to be subject to change without notice and deliveries are subject to strikes, accidents or manufacturing contingencies. The fact that there is no warranty on Axes or Tools will be regarded with favor by the trade.

There is nothing especially important to note in regard to the Freezer market in which prices are not materially different from last season. There is, however, an animated competition between the different manufacturers, and some who have recently entered the field are pushing vigorously for business. Manufacturers generally refer to the demand as good and are anticipating a satisfactory trade during the season.

So far as the manufactureas of Strap and H hinges are concerned the market is in much better shape than it was a month or two ago and prices are being well adhered to. The jobbers, however, are showing a disposition to cut prices, and a number of leading houses are selling the goods at lower figures than they can now be purchased from the manufacturers. This induces some irregularity in current quotations.

Steel Squares are somewhat irregular and the market is somewhat weaker than it has been owing to the fact that some of the manufacturers are naming lower prices than heretofore. This is not, however, understood to be on account of too large a margin of profit on current prices, which are referred to as very near the cost of manufacture.

There is some irregularity in the prices at which Tackle Blocks are selling, and the market, without having any specially new features, is not regarded as very strong. Prices are, however, pretty well adhered to by the manufacturers though jobbers are disposed to sell on comparatively narrow margins.

The Wire market is decidedly unsettled and it is difficult to make definite quotations owing to the uncertainty which characterizes it and the diverse prices made by the different manufacturers. It is decidedly a buyer's market. The prices quoted, even in a general way, show a marked decline below those current a few weeks ago, and Bright and Annealed Market Wire have sold as low as discount 75 per cent., with Coppered, Galvanized and Tinned at corresponding discounts. This condition of things has a certain effect upon Wire Netting, Wire Goods, &c., inducing a lack of confidence in the stability of prices.

Washita Stone is held firmly at the recently advanced prices and the manufacturers report a very satisfactory business.

The jobbers holding stocks of Loaded Shells are offering them at low figures, apparently anticipating an early decline in the price. Of this however, no open intimation is given by the manufacturers but it is understood that a small reduction in price will be made.

Russell & Erwin Mfg. Company, New Britain, Conn., and New York, under date April 1, announce the following discounts on Machine Screws:

Iron.

Flat Head	dis. 65 %
Round Head	60 %
Fillister Head	60 %

Brass.

Flat Head	65 %
Round Head	60 %
Fillister Head	60 %

There has been little change in the market for Rubber Hose, Belting, &c., and the demand is generally referred to as fair, and some of the manufacturers report an excellent business. It is not thought at all probable that a trust or consolidation of interests will be formed in this line notwithstanding the vague rumors to the contrary. Efforts have been made from time to time during the past few years to bring about such an agreement, but there are obstacles in the way which have not been removed, and in the nature of the case are not likely to be removed. There are certainly few lines of goods made of Rubber which can be so much reduced in quality as the mechanical line in which rubber substitutes and other adulterants can be and are largely used. This is obviously a formidable obstacle to the formation of a trust, for no agreement could be made for standard qualities, and consequently no rule could be adopted for establishing fixed prices and discounts. Efforts were made not long ago by English syndicates to obtain control of the manufacture of this line of goods, but they were without success. Representatives of some of the companies are known to have made trips to London to offer terms to a syndicate there who were thinking of buying a controlling interest in these companies, but nothing came of it and matters continue in their former shape.

The regular monthly meeting of the Wrought Iron Pipe and Tube Manufacturers' Association was held at the Duquesne Club, Pittsburgh, on Wednesday, the 26th inst. Campbell B. Herron, chairman of the association, presided, and James H. Murdock acted as secretary. The attendance was unusually large, about 30 firms being represented. After a full discussion, it was decided to make no change in prices. Trade was reported to be in fairly good condition, with prospects of a great improvement as the country roads become passable.

Nason Mfg. Company, 71 Beekman street, New York, announce under date March 25, the withdrawal of all quotations on Radiators. It is intimated that prices will be furnished on application.

Schuyler's Rat Killer, manufactured by J. B. Schuyler & Co., Bloomsberg, Pa., for whom Tommins & Adams, 116 Chambers street, New York, are agents, is sold at $15 per gross. The advertisement on page 101 represents this article.

The All Copper Tea Kettles made by Johnson Mfg. Company, Collins, N. Y., of which an illustration is given on page 578, are sold from the following list, which is subject to a discount ranging from 60 to 60 and 10 per cent.:

Pit Bottoms:	Per doz.
No. 9, for 6 inch	$24.00
No. 11, " 7 "	27.00
No. 12, " 8 "	30.00
No. 13, " 9 "	33.00
Flat Bottoms:	**Per doz.**
No. 110, for 6 inch	$24.00
No. 111, " 7 "	27.00
No. 112, " 8 "	30.00
No. 113, " 9 "	33.00

Nickel Plated on Copper.

Pit Bottoms:	Per doz.
No. 16, for 6 inch	$33.00
No. 17, " 7 "	36.00
No. 18, " 8 "	39.00
No. 19, " 9 "	42.00
Flat Bottoms:	**Per doz.**
No. 116, for 6 inch	$33.00
No. 117, " 7 "	36.00
No. 118, " 8 "	39.00
No. 119, " 9 "	42.00

For Brazed Spouts, add $2.50 per dozen to above list.

Under date April 1 American Screw Company, Providence, R. I., issue a revised discount sheet, in which changes are made in quotations of Machine Screws and miscellaneous Wire nails, and quotations are given on the Rogers' Drive Screws. These lines of goods are thus quoted:

Rogers' Drive Screws	dis. 66⅔ %
Machine Screws:	
Iron, Flat Head	65 %
" Round Head	60 %
" Fillister Head	60 %
Brass, Flat Head	65 %
" Round Head	60 %
" Fillister Head	60 %
Miscellaneous Wire Nails, Steel:	
1 pound and 25-pound packages	70&10 %
100-pound kegs	70&10 %

There is no important change to note in the prices of imported goods. From the condition of the markets on the other side it would seem that the limit of advance has been reached, and there are indica-

tions that prices will not be quite so strong in future. The prices of Cutlery remain as they have been, but it is to be noted that owing to the scarcity of ivory, ivory handled goods are relatively high.

The Lunkenheimer Brass Mfg. Company, Cincinnati, Ohio, have issued a revised price-list on Glass Oil Cups and Lubricators, which shows a material reduction. It is in the form of a supplement to their catalogue of June, 1889.

Trade Topics.

Questions in regard to freight are among the most perplexing which the manufacturer or merchant has to encounter and the operation of the Interstate Commerce act is constantly receiving attention from interested parties, those who find their interests interfered with by its action being naturally the most ready to call attention to its effect. In the following letter from a river jobbing point in Wisconsin our correspondents thus allude to the matter:

The jobbing business at this point, and in fact at all river jobbing points, has been seriously interfered with by the Interstate Commerce act, which permits the railroads to make the same rates from Lake Michigan to points 200 miles west of the Mississippi as they make to points on the river or 100 miles east of it; that is, they will carry freights to points from 100 to 400 miles west of the lake at about one price, so that under the "long and short" haul clause of the Interstate Commerce act the jobbers of all heavy merchandise along the river will be unable to do a profitable business. In the matter of passenger traffic a different rate is made for every mile traveled. A passenger traveling 400 miles is compelled to pay four times the fare of one traveling only 100 miles, but if living in Wisconsin, Iowa, Minnesota, Nebraska or Dakota, he can ship his freight 400 miles at the same price as 100. This does not seem right and there should be a provision in the Interstate Commerce act preventing it. Railroads might be permitted to make the same rates to points embraced in districts or sections of 50 miles. We think you would get some interesting letters if you were to ask the opinion of the Hardware jobbers on the workings of the Interstate Commerce act in their locality.

We have received the following communication in regard to a Gun Cleaner which we refer to our readers. The suggestion of our correspondent may be worthy the attention of some manufacturer:

In target practice I have been much troubled with the loading of the revolver barrel and find it very difficult to clean the grooves. After some experimenting I found that the hard black coating could be removed with a copper wire which was hard enough to scrape out the scales from the grooves and at the same time did not scratch the barrel. This discovery lead to the belief that a cylindrical brush of copper or brass wire made after the manner of the bristle cleaners commonly sold with revolvers would prove a very effective device for removing lead, and acting on the inspiration I sought for such a wire brush among all the principal manufacturers and dealers in New York. The first revolver-maker called upon had never heard of such a brush, but thought it would be an excellent thing, though he could not underake to manufacture and supply them with his revolvers, because the small margin of profit on low-priced goods would not admit any extra expense. The next dealer visited proved to be a very conservative member of society who preferred a hickory ramrod, a vise, a piece of oily rag and plenty of muscular exertion to any such new-fangled notion. Two other dealers, who are also prominent manufacturers of high-class goods, were altogether indifferent and lazily intimated that everything worth having in the gun line was in their stock, and if I wanted anything else I had their full permission to search for it elsewhere. So you see, Mr. Editor, I have finally come to the front of wisdom in Hardware matters to ask if such a cleaner as I have described is manufactured, and if not, why?

A New England manufacturer refers in the following terms to the freight classification and legislation in regard to rates of freight, &c:

We feel that railroad legislation and classification, as in some sections of the country the freight amounts to more than 25 per cent. of the net value, are the present serious problems for the manufacturer to solve. The classifications and methods now employed by some lines are prohibitory over portions of the country in which in years past we have been favored with a considerable trade.

Business Methods.

Howe & Co., Troy, N. Y., have prepared for their customers a want-book, which embodies some new features and will doubtless be found very convenient and serviceable. The book is 4¼ inches wide and 10¼ inches long and contains a large number of blank pages specially ruled for the convenient entering of goods that may be needed. A special feature of novelty is that the book is divided into departments for the different months at the beginning of each of which a list is given of seasonable goods; thus under April a page is devoted to an enumeration of the different goods usually purchased by the retail trade during that month, such as Carpet Sweepers, Tack Claws, Carpet Whips, Bird Cages, Refrigerators, Freezers, Sheathing Paper, Pruning Shears, Post-Hole Diggers, &c., and many others, after which are a number of blank pages for memoranda in regard to such goods. It is obvious that as for each month an extensive list of seasonable goods is given suggestions will thus be given to the merchant in regard to his ordering, and that thus his interests will be served. There are also in connection with these monthly enumerations such suggestions as these: "Write for prices on Builders' Hardware;" "Carpet Sweepers make a good Christmas present;" in connection with Dog Muzzles, Dog Collars, &c., "Look up new State laws regarding dogs," and others showing the care with which the book has been compiled. It also contains in a condensed form miscellaneous tables, statistics and varied information in regard to postage, business rules, holidays, weights and measures, &c., and gives also the lists of Wire Nails, Carriage Bolts, Tire Bolts, &c. The book, we understand, was compiled by their travelers, whose names are appropriately given in it, as follows: J. J. Benson, J. C. Hardy, F. M. Swartwout and G. A. Buffington.

What the Trade Say.

There are probably no class of commercial travelers who stand higher in personal worth than the representatives of the Hardware trade, and between many of them and their customers exceedingly pleasant relations exist on the basis of mutual respect. There are, however, it is to be presumed, others who are not so well qualified for the positions they occupy; and it is possible that some of our readers may sympathize with the following expressions of one of our correspondents. After referring to the waste of time occasioned by travelers who do not understand their business and have not a due regard for the value of the merchant's time our correspondent says:

To silence the impudent and noisy ones and to save time I have a large notice in a frame over my office door which reads: *Take Notice. We do not buy goods to please any agent or house. Our time is money. If you are not in a hurry do not bore us.*

I have seen many a traveler with his mouth open ready to shoot off at a wonderful rate relax on seeing this notice and inquire if we were in need of any merchandise to complete our stock, and having been politely informed, accepted the situation gracefully. I think if some other man who has more time to write than I have would take this theme up and do it justice in *The Iron Age* that number, at least, would be kept very choice. I have often wanted such an article to hand to some bore to silence him before I put up my official notice. Many good men who are kind and polite, No. 1 salesman, will stand this teasing, and finally to get rid of the traveler orders goods that he does not actually need, or that his locality does not call for, and further, that he has not the means to purchase, and so he makes a leap in the dark. But hear me! In less than 60 days unless the money is forthcoming you may have the heavy hand of the law upon you, and perhaps your will be shut in the end for not having inherited the ability to say yes or no when you mean it and then let that be the end of the matter, instead of being coaxed and bullied into buying what you do not need. If the editor publishes this and it awakens a discussion upon this delicate point it will do more real good than the plan of the finest store in New York State It may give some one courage to master the use of the words yes or no sufficiently to save him from the abyss of bankruptcy. I hope these remarks will call out something from a more felicitous pen.

Items.

In the article in our last issue relating to *The Iron Age* Hardware Price Books a typographical error occurred in connection with the diagrams, Figs. 4 and 6, which were incorrectly designated, Fig. 4 being given as showing the arrangement of Price Book A, when in fact it shows the arrangement of Price Book C, and Fig. 6 being referred to as giving the arrangement of Price Book C, when in fact it gives the arrangement of Price Book A. The trade will please note the correction as the error may have caused some misapprehension. In the article on the subject the diagrams were, however, referred to correctly.

Announcement is made by C. L. Linton, assignee of the Siegler Hardware Company, Junction City, Kan., that the entire stock and fixtures of the company are offered for sale. This is referred to as one of the most complete and best selected stocks of new goods, consisting of Shelf Hardware, Cutlery, Stoves, Tinware, Guns, Glass, Buggies, &c., the store being in excellent location and commanding a large and desirable trade. It is stated that the entire stock and fixtures will be sold in bulk or quantities to suit purchasers at lower prices than can be had in Eastern markets.

Our readers will observe the notice on page 69, in which the advertiser, who is to be addressed as Jones, care of *The Iron Age*, announces his desire to purchase a manufacturing plant. This, it may be added, is an opportunity which is deserving of attention from those who have such property to offer for sale, as the advertiser is a well-known manufacturer, and in connection with the enterprise a number of hands would be employed.

C. Warren Cheney, Athol, Mass., is putting on the market the Cheney Lawn Mower in 10, 12 and 14-inch sizes. He is also making an all steel adjustable Fork Wrench.

John Chatillon & Sons, 85, 87 and 89 Cliff street., New York, have issued a pocket edition of their 1890 catalogue. It is a book of more than 200 pages, which will be found very convenient. Illustrations are given of many of the leading goods are given in connection with ade-

goods with list prices and descriptive matter in clear legible type. It indicates the extensive line of goods made by them, and will doubtless be appreciated by those who receive it. We are advised that a copy of it will be sent to any one in the trade who desires it.

For cutting bushes and weeds, for trimming shrubbery, lawns, borders and cemetery lots, G. & M. Nolin, Skowhegan, Maine, call attention to their Grass Hooks, which are described as made light and strong from sheet steel, attractively finished and well packed. They are illustrated in their advertisement on page 121.

George H. Hutton & Co., Baltimore, Md., issues an attractive catalogue of specialties in Carriage Hardware, which they are manufacturing. It relates to Jump Seat Irons, Arm Rails, Single and Double Lazy Back Irons, Shaft Couplings, &c. The catalogue is neatly printed, and illustrations are given of the different goods.

We are advised that Lewis G. Weatherly, who has been with Huntington, Hopkins & Co., San Francisco, Cal., for some years, has gone into the commission and agency business at 132 Market street, in that city.

The extensive line of Corkscrews, Cork Pullers, Lemon Squeezers, &c., heretofore put on the market by James D. Frary, Meriden, Conn., will hereafter be manufactured and sold by the Meriden Malleable Iron Company, of that city.

Kelly Axe Mfg. Company, Louisville, Ky., issue a circular relating to the destructive tornado that passed over their city, stating that they escaped and their works are running as usual, and that they are prepared to fill orders promptly.

Our readers will observe the special notice on page 69, in which the Board of Trade of Winona, Minn., announce that a fine plant consisting of several large brick buildings, fully equipped with improved wood-working machinery and 27 acres of ground, are offered at a very reasonable price. It is intimated that it would be an excellent location for car works. Attention is called to the population of Winona and its shipping facilities by railroad and river.

Vaughan & Bushnell Mfg. Company, Chicago, Ill., in their illustrated catalogue and price-list, March, 1890, represent the line of Hardware specialties of which they are manufacturers. It is intended to take the place of all previous ones and exhibits in more than 100 well-printed illustrated pages their well known line of goods. The first department is devoted to Blacksmiths', Horseshoers' and Railroad Tools, another department being occupied with special Wrought Goods, such as Grappling Hooks, Hitching Rings, Cotton Hooks, &c. Another relates to Butchers' and Packers' Goods, and another to Tinners' Tools, including Hollow Punches, Hand Groovers, Solid Punches, &c. The company call attention especially to the quality of the steel of which these goods are made, and allude to their Anvil Tools as much lighter than the average run of these goods, and therefore better adapted to wagon and carriage work.

Henry W. Peabody & Co., 58 New street, New York, issue a neat card in regard to the Australian and New Zealand mail service, giving the dates of sailing of the steamers on the outward and homeward voyages. On the back is a convenient map of Australia and New Zealand.

John W. Boughton, 1207 Chestnut street, Philadelphia, issues a circular relating to Wood Carpet, Wainscots, &c., in which also an interesting line of Folding-Screens and Fire-Screens are represented. These frames are made of wood, such as oak antique, sycamore, cherry, mahogany, imitation mahogany, ebony, white wood, enamel, &c.

Hartman & Durstine, Wooster, Ohio, issue a circular relating to the Hartman patent Inside Sliding Window Blinds, giving illustrations explaining their operation and use.

C. G. Hussey & Co., Pittsburgh, Pa., issue a card giving table of weights and capacity of Brass Kettles from 8 to 24 inch.

P. J. Conroy & Co., Philadelphia, Pa., have issued their 1890 illustrated catalogue of Refrigerator and Closet Door Fastener, Hinges and other Refrigerator and Building Harware. A number of new goods are represented in it, including Cast-Brass Refrigerator Hinges. Illustrations are given and list prices.

F. E. Myers & Bro., Ashland, Ohio, issue a circular in regard to patent Double and Single Metal Rail Hay-Carrier Tracks, in which they and the Ney Mfg. Company give information in regard to the patents under which these Tracks are made.

It will be observed that among the Special Notices on page 68 is one in which attention is called to a large manufacturing plant located in Massachusetts. The advantages possessed by it are referred to at some length.

Wm. P. Kellogg, Troy, N. Y., for whom Fuller Bros., 33 Chambers street, New York, are agents, has issued his catalogue for the present year. It describes the line of Curry Combs, Push and Pull Window Blind Hinges, Curley's patent Lemon Squeezer, Whip Racks, Boring Machines and Mortising Machines which he is manufacturing. It is to be noticed that several new patterns of Curry Combs are represented.

The trade will observe the striking announcement occupying page 85, in which C. E. Jennings & Co., 97 Chambers street, New York, call attention to their varied line and illustrate some of their leading goods.

The Chicago Tack Company, Grand Crossing, Ill., issue a convenient and well-arranged price-list, giving the revised prices adopted October 19, 1889, and supplement list adopted December 12.

The partnership heretofore existing between Wilcox & Howe, Birmingham, Conn., was dissolved February 27. In a circular issued March 24, by Isaac P. Howe of the late firm, it is stated that Mr. Wilcox wished to retire from business and as Mr. Howe desired to continue, it was found necessary to appoint a receiver, so that business could be continued without interruption and all interests could be protected. The following information is also given by Mr. Howe in regard to the carrying on of the business:

It is the intention to merge the business into a stock company soon as possible. It was very desirable to have an inventory taken and an appraisal made by disinterested parties as a basis for forming a stock company. The inventory has been taken with scarcely any interruption to business, and the figures will be submitted to all interested parties at an early date.

This circular is sent out to correct an erroneous impression that the business is to be closed out by the receiver. No such course is contemplated. The business is being continued precisely the same as if no change in management had taken place, as far as receiving and filling orders is concerned. Besides special efforts are being made to fill orders more promptly than ever.

On March 7, 1890, Wm. C. Atwater, Esq., of Birmingham, was appointed receiver, with power to continue the business. Mr. Atwater accepted the appointment and is now conducting the business. It is not intended to make any change in the goods manufactured, and all persons who have dealt with Wilcox & Howe can feel assured that they will get from the receiver the same grades of goods as heretofore.

Mr. Atwater is widely known in this section of the State as a successful business man and will do all in his power to please his customers and maintain the business of the firm.

Since the appointment of the receiver, I have continued in the office as business manager in the employ of the receiver, and am devoting my whole time to the interests of the business.

The John P. Lovell Arms Company, Boston, Mass., have just issued a catalogue of Bicycles, Tricyles and sundries. It is a pamphlet of 40 pages and represents the Diamond Safety of their own manufacture in connection with an extensive assortment of the Singer Safeties, Tandems and Tricycles, Bicycle supplies and the Kodak Camera. Special attention is called to the Spring Handle Bar for Bicycles, and a detailed illustration of it is given. The contrivance is of their own invention and is designed to absorb the vibration on the front wheel. In the introductory notice the company state that this is their first season as manufacturers of Bicycles, and reference is made to their extensive plant and excellent facilities for turning out high grade work.

Day Rubber Company, St. Louis, Mo., issue a special circular to the trade calling attention to their Lawn Hose, Brass Goods and Hose Reels, on which special net prices are given.

Luther Boardman & Son, East Haddam, Conn., have issued a new and attractive illustrated catalogue and price-list. It relates to Electro Silver-Plate and Nickel Silver Flat Table Ware, Spoons, Forks, Butcher Knives, &c., and also their well-known line of Brittannia Spoons. The catalogue is effectively printed on paper of different colors, and is very conveniently indexed with a side index sufficiently wide to permit a pretty full enumeration of the goods.

P. & F. Corbin, New Britain, Conn., and New York, issue a circular stating that while it has been the custom of manufacturers of Locks to pack screws with Rim Latches and Locks, they have decided to furnish suitable screws with all Mortise Latches and Locks as soon as the stock in hand is exhausted. This new departure in Lock packing will doubtless receive the hearty indorsement of Hardware dealers and be found to serve the convenience of the trade and consumers. In it is stated that no additional charge will be made for the Locks packed in this manner to such customers as handle their line of Hardware. Their supplement No. 2, illustrating new goods which have been added since their catalogue of 1885 was issued, will be ready for distribution at an early date. They direct special attention to their complete line of Harvard Flat Keyed Cylinder Locks described in it.

North Bros. Mfg. Company, Philadelphia, issue circulars relating to North's Sash Fastener and the Weed Improved Faucets.

John P. Lovell Arms Company, Boston, Mass., have issued a new catalogue relating to Guns, Revolvers and Police Goods. It is a well-printed pamphlet of 24 pages, fully illustrated and representing their well-known line of goods. The Diamond Safety Roller Skates and Hunt's Life-Saving Gun are also illustrated.

Hull & Rogers, Danbury, Conn., whose stores were burned February 2, are building two stores, 24 x 90 feet, three stories and basement. One will be used for their Hardware business and another for House Furnishing Goods, Furniture, &c.

The Storm Mfg. Company, Poughkeepsie, N. Y., for whom John H. Graham & Co. are sole agents, 113 Chambers street, New York, have issued a catalogue of their New York Safety and Manhattan Dumb Waiters and the Humphrey Hand Elevator. Numerous illustrations of these

quate descriptive text, as well as letters testifying to the satisfactory working of the appliances.

The Eagle Bicycle Mfg. Company, Stamford, Conn., issue an attractive and very satisfactory catalogue describing their Bicycle, an illustration of which is given on page 578 of this issue. A number of cuts are given showing the construction of the machine and calling attention to its special features of novelty and the advantages which are claimed for it.

Obituary.

Col. James D. Frary died March 25, at the City Hotel in Meriden, Conn. He was suffering from an attack of pleurisy which had developed into pneumonia. Colonel Frary was at one time one of the leading manufacturers of Connecticut and a member of the firm of Landers, Frary & Clark, of New Britain, who still retain his name, though he has had no interest in the business for a number of years. After leaving the company he engaged in the manufacture of Cutlery at Bridgeport, but the venture was not successful. About two years ago he went to Meriden and engaged with the Meriden Malleable Iron Company in making Cork Screws, Lemon Squeezers, &c.

Samuel A. Busick, formerly a member of the firm of Sheldon, Hoyt & Co., and Hoyt, Busick & Co., died recently at his residence in Elizabeth, N. J. He was widely known to the Hardware trade as having been connected with the above large jobbing houses doing an extensive business, especially in the West and Southwest. He was 60 years of age.

Games, Athletic Goods, &c.

There is in many parts of the country increased interest being taken in athletic and outdoor sports, and will be well for Hardwaremen to be on the lookout for opportunities to extend their trade in this direction. This is a varied line of goods which may properly be handled by them to advantage, and this is the kind of business, which, if the merchant's circumstances justify it, can usually be carried on at good profit. A recent issue of the London *Ironmonger*, refers editorially to this matter, and if for cricket our readers substitute baseball and make a few similar changes which will be suggested by the different conditions prevailing here, our contemporary's remarks in the general spirit will apply very well to this country:

It may seem to be a little premature to think about out-door games, yet the days are lengthening, and those who intend to push the sale of such goods must soon make their selections and give out their orders. Frost and snow will, in the ordinary course of things, soon give way to better weather, and the Easter holidays will certainly witness the resumption of cricket and other out-door games. It is probable, we think, that Ironmongers as a body do not pay sufficient attention to this department of business. It is not unprofitable, and it is not one involving any great outlay of capital, while it is certainly very suitable for Ironmongers. The Ironmonger sells and repairs Lawn-Mowers and most of the other appliances used in the garden, so that there is no reason whatever why he should not sell also the appliances used for cricket, lawn-tennis, croquet, badminton, archery and other games. As a matter of fact, many of our retail friends do deal in these goods, and do very well indeed with them; but the department is not yet as general as it ought to be. The demand for goods of this class is almost universal—at all events there is no district, whether town, suburban, or rural, where there is not a good and increasing sale for these games. The goods are not everlasting, and the young people who are their chief users do not desire that they should be—indeed, their energy and the desire for change insure a good demand year after year. Thus there is every encouragement for Ironmongers to sell such appliances, and even to push them with considerable vigor. The sale may be helped greatly if proper care is taken to display them in an advantageous manner.

A window nicely dressed with Cricket, Tennis, &c., goods can be made to look exceedingly well, and the effect is heightened and emphasized if a couple or so of suitably-clothed "lay" figures of boys are introduced. There is room, indeed, for much artistic display in such a window, and a good dresser, with the aid of a green-baize ground and some assistance from colors, ought to be able to produce good effects. There may be competition, perhaps, with the neighboring draper or toy-shop, but if the ironmonger "goes in to win" he need not be afraid of any of his rivals. As a matter of fact, he ought to be nicely ahead of them, inasmuch as when the annual "doing up" of the Lawn Mower, Garden Shears, and so on comes along, he has the opportunity of "improving the occasion" some weeks before his competitors are likely to be consulted. There is also something to be done by way of local advertising and circularizing, so that the people of the neighborhood may be led to inspect the ironmonger's stock, and hear what he has to say, before, or instead of, going to the draper or any other local dealer in such goods. This is particularly desirable if the department is a new one in the ironmonger's business, but it is by no means to be overlooked or neglected if he has been in the habit of selling games for some years. The draper is an enterprising man, as a rule, and the constant visits to his shop of the ladies of families give him a pull which the ironmonger would not be wise to overlook. As to the sources of supply of games, it goes without saying that they are numerous. In some lines, such as Tennis Racquets, Poles, Balls and Nets, certain makers possess high reputations, while of all the goods there are scores of makers of articles which may be classed as "general utility," and are about alike in quality and price. Some of these makers have their announcements in our outer pages from time to time. As they thus show their wish to do business with ironmongers, it follows that they ought to be supported.

How Shall Retailers Advertise their Business?

In the communication given below our correspondents, who are a well-known house in New York State, refer to the fact that advertisements as now given in newspapers are of more interest than they formerly were, from the attention given to getting them up, and describe also their other methods giving several valuable suggestions:

We use exclusively the newspapers for advertising, reasoning that more people will read our advertisement in them than in any other form. Our experience is that more people read the advertisements in the daily and weekly papers than formerly, because more care is taken in making them attractive and more electroplates are used to make them plain. Then advertisements are more honestly worded and we think are generally believed as true. We use altogether electroplates and rarely put in a new advertisement without some showy cut. Manufacturers are always pleased to furnish them to us. We always make a point to change our "ad." at least once a week in the daily papers and once in two or three weeks in the weekly. We believe that "honesty is the best policy" in writing our advertisements and always tell nothing but what we can carry out. We, like all Hardware dealers, are buying new goods every month and soon make them a staple article by judicious use of printers' ink. We never advertise in a general way but make a drive on some one article. It pays, we all know, and the more generous the use of the newspapers, the larger our trade will extend.

In this letter our correspondents refer to their experience and the trade which they are able to address in their advertisement in the paper published in their town:

We are pleased to state that we have a lively weekly local newspaper in our town that has a circulation of several hundred copies, in which we have an advertisement occupying a half double column, and we have given it a fair trial, then stopped the same to see the effect on trade, and we must acknowledge that it pays us well to keep the advertisement in the year through. We constantly have customers calling for goods that they have seen advertised in the paper. We do not consider the use of circulars very profitable, as too much of that kind of advertising is done by concerns that do not amount to anything, and people will throw them one side. Our paper being patronized well by the local merchants, and not catering to patent medicine and other outside advertisements, makes it very interesting to the towns-people.

A successsul New Jersey Hardwareman thus refers to the advantage of advertising in the local papers and gives points in regard to how this can best be done:

I think the best way for a retail Hardware man to advertise is through the local papers. Have your matter changed often. Set up in plain attractive type and mention seasonable goods. Printed circulaers receive very little attention no matter how distributed, but an advertisement in the local family paper is fresh with each issue and keeps the house before the public.

Our correspondents in the following letter, while describing their methods, make the point that in sending out circulars pains must be taken to make them interesting:

We do not consider ourselves very extensive advertisers, still, if our opinion is good for anything you are welcome to it. We keep an advertisement in our local paper continually and intend and should make frequent changes in the form and material. This method we consider perhaps the most advantageous of any, although we send circulars through the mail when we wish to call attention to special lines and we do so with good results, but it is very necessary to make them interesting enough to be read.

In addition to other points a well-known Hardwareman in Vermont emphasizes the importance of a frequent change in advertisements so as to make the announcement of constant interest to the paper's readers:

It is my opinion that the general Hardware trade, especially the retail trade, could reach its customers best through a liberal use of the columns of its local paper or papers, although some special lines, trade in which is confined to a limited season, could be advantageously advertised by circulars, &c. Think that a frequent change of the advertisement in the papers is of use, as if changed often the public soon note the fact and then look at every issue to see what that change may be. A liberal use of the columns of a good local paper in my opinion is certainly of much use in gaining trade.

In the following letter a well-known Massachusetts house explain the method followed in their newspaper advertising and inclose circulars relating to their business. One of these circulars relates to their Tool department, and gives a list of some of the goods, such as Saws, Planes, Chisels, Hammers, &c., which they are selling, with the names of the manufacturers. Another is devoted to their Wagon Material department and enumerates some of the leading goods in this line. A third relates to their Paint department and indicates the principal goods handled by them in this branch of this business:

The question in regard to advertising is one to which we have given considerable thought, and it is yet, to us, unsolved.

We use our local papers liberally, both in display advertisements and the short "Local Notices" which everybody glances at if they do not read. We have two weeklies, a Sunday and a daily. Our advertisements in the Sunday refer always to specialties and seasonable goods, and we intend to have this paper and the weeklies have something of interest from us in each issue. The daily we use intermittently. We also have slips like the inclosed, which, with the many circulars furnished us by parties of whom we buy, we use in our regualar mail and by special mails through our terrttory. In our advertising we make no lurid statements and seldom refer to prices. It has always seemed to us that the sign-board, painted rock and wild "cut prices" style of advertising was beneath the dignity of a well-established Hardware house.

Exports.

PER SHIP ORCHOMENE, MARCH 25, 1890, FOR MELBOURNE, AUSTRALIA.

By Arkell & Douglas.—3 gross Brushes, 842 pounds Mallets, 7 Fly Wheels, 90 dozen Hatchets, 625 pounds Cart Wheels, 50 dozen Axes, 1 dozen Boring Machines, 18 dozen Rakes, 42 dozen Braces, 12 dozen Axes, 1 dozen Saw Sets, 6 dozen Hammers, 14 dozen Thermometers, 100 dozen Fishing Rods, 4 dozen Wringers, ½ dozen Mangles, 690 pounds Glue, 84 dozen Handles, 12 dozen Axes, 1 dozen Money Drawers, 3 dozen Saws, 12 Perambulators, 3 Drills, 2 dozon Bolt Cutters, 728 pounds Iron Castings, 18 dozen Axes, 4 dozen Saws, 2 dozen Perambulators, ½ dozen Pumps, 12 dozen Forks, 3 dozen Money Banks, 158 dozen Hinges, 50 dozen Staples, 25 dozen Iron Castings, 2 dozen Broilers, 20 dozen Axes, 2 Shrinkers, 22 Lawn Mowers, 2 bundles Handles, 6 dozen Reflectors, 1 gross Hinges, 230 yards Oil Cloth, 3 dozen Neck Yokes, 57 gross Screws, 36 dozen Fly Traps, 100 pounds Glue.

By W. H. Crossman & Bro.—600 dozen Handles, 3 cases Hardware, 40 dozen Snaths, 1 case Hardware, 6 dozen Saws.

By R. W. Forbes & Son.—1 box Carriage Bolts, 1 box Hardware.

By Meriden Britannia Company.—10 packages Platedware.

By H. W. Peabody & Co.—3 packages Hardware, 14 package Lampware, 10 dozen Handles, 5 cases Hardware.

By E. Miller & Co.—22 packages Lamp Goods, 1 box Lamp Goods.

By Welsh & Lea.—10 cases Iron Bolts.

By J. McEwan & Co.—395 pounds Hardware.

By Sargent & Co.—11 cases Hardware.

By Ilsley, Doubleday & Co.—560 pounds Glue.

PER BARK NETTIE, MARCH 25, 1890, FOR LYTTLETON, NEW ZEALAND.

By R. W. Forbes & Son.—15 packages Churns, 38 packages Lawn Mowers, 1 dozen Spades, 1 dozen Hoes, 2 dozen Rakes, 24 packages Churns, 17 packages Hardware, 3 packages Hay Rakes, 1 box Hardware.

By Arkell & Douglas.—12 dozen Hatchets.

By A. Field & Co.—2 gross Axle Grease, ½ dozen Wringers, 24 dozen Wrenches, 12 dozen Axes, 30 dozen Handles.

By Coombs, Crosby & Eddy.—11 dozen Tools, 125 pounds Washita Stone, 6 dozen Rakes, 3 dozen Hoes, 1 dozen Snaths, 71 pounds Rope, 1 dozen Lamps, 2 dozen Scythes.

By H. W. Peabody & Co.—70 dozen Handles, 5 cases Hardware, 900 pounds Nails, 2 packages Hardware, 1 case Tacks, 2 dozen Churns, 10 packages Hardware, 12 dozen Handles, 2 cases Tacks, 9 packages Hardware, 10 dozen Handles, 2 dozen Oil Stoves, 25 dozen Washboards, 1 dozen Hoes.

By Dunbar, Hobart & Co.—2502 pounds Nails, 3360 pounds Nails.

By Healy & Earl.—3 cases Road Carts.

FOR WELLINGTON.

By A. S. Lascelles & Co.—6¾ dozen Carts.

By L. D. Crossmond & Co.—2271 pounds Cultivators.

By Collens & Co.—10 dozen Picks.

By W. & B. Douglas.—42 Pumps.

By Dunbar, Hobart & Co.—3360 pounds Nails.

By McLean Bros. & Rigg.—19 Stoves, 65 dozen Axes, 800 pounds Nails.

By W. H. Crossman & Bro.—2700 pounds Nails, 14 cases Horse Nails, 1 gross Snaths, 18 dozen Handles, 2 cases Hardware.

By H. W. Peabody & Co.—10 packages Lampware, 1 Road Cart, 19 cases Hardware, 76 dozen Handles, 12 dozen Washboards, 8 dozen Hay Forks, 12 cases Hardware, 2 packages Lawn Mowers, 6 cases Hardware, 150 pounds Nails, 1500 pounds Bolts, 18 dozen Handles, 10 dozen Washboards, 20 cases Hardware, 6 dozen Forks, 120 dozen Handles, 16 packages Hardware, 347 pounds Nails, 13 packages Wireware, 3 gross Traps, 5 cases Plated-Ware, 18 Stoves, 35 pounds Twine, 1 case Hardware.

By A. S. Lascelles & Co.—126 pounds Handles.

By McLean Bros. & Rigg.—2 cases Castings, 252 pounds Whetstones, 2½ dozen Wringers, ½ gross Whetstones, ½ dozen Sad Irons, 16 cases Hardware, 1 Jack, 6 cases Hardware, 2 Drills, 18 sets Axle Boxes, 2 dozen Sinks, 1200 pounds Horse Nails, 1 dozen Meat Choppers, 1 dozen Emery Wheels, 19,900 Bolts, 4 barrels Lampware, 4 cases Lampware, 10,000 Cartridges, 2 Drills, 3 gross Cork-Pullers, 3 Bolt Cutters, 2 dozen Sad Irons, 4 dozen Churns, 10 dozen Sash Cord, 2 dozen Miter Boxes, 5500 Cartridges, 300 pounds Horse Nails, 2 dozen Pumps, 6 dozen Sash Cord, 1½ dozen Wringers, 2 cases Hardware, 56 pounds Nails.

By Arkell & Douglas.—1 dozen Brads, 5 dozen Wrenches, 10½ dozen Saws, 3 Planters, 130 pounds Iron Castings, 200 pounds Nails, 33 Nails, 33 dozen Pulleys, 3 packages Hardware.

By R. W. Forbes & Son.—492 dozen Axe Handles, 40 dozen Axes, 18 racks Churns, 10 packages Hardware, 10 dozen Washboards, 60 dozen Axe Handles, 2 cases Scales, 1 dozen Wringers, 1 box Hardware, 5 cases Fire Arms, 900 pounds Horse Nails, 13 cases Hardware, 30 dozen Sash Cord, 13 dozen Rakes, 17 dozen Potato Hooks, 72 dozen Hoe Handles, 10 packages Lawn Mowers, 1 case Lampware, 17 packages Churns, 5 dozen Wringers, 6 racks Churns, 2 casks Pumps.

REVIEW OF THE WHOLESALE MARKET IN PAINTS AND OILS.

It should be understood that the prices quoted in this column are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a considerable range of prices.

Paints and Colors.

Manufacturers and jobbers complain that unfavorable weather continues to restrict business more or less in nearly all lines of Pigments and Colors. Orders have been coming in rather slowly and almost invariably small at that, which fact, along with the backward condition of trade during the preceding fortnight, is cited as sufficient evidence that present wants of distributors are rather behind the average for the season. Little is going on in the way of contracts for either grinders' or painters' goods for future delivery, the tendency being extremely conservative in the matter of providing for later wants, as well as with purchases for immediate delivery. There have been few changes in prices and the general market may fairly be said to retain a good tone despite the rather disappointing character of current sales.

White Lead.—Corroders report only a fair sort of movement of pure white Lead and attribute the slowness of sales to the unfavorable weather that has prevailed in all localities which draw supplies from this market. Makers of the cheaper sorts also admit a falling off in sales latterly, but jobbers and retailers assert that the better class of cheap Leads are faring relatively better than the pure article, and some manufacturers talk seriously of advancing their prices before long in view of the favorable prospects for increased demand later on and the high cost of Linseed Oil. No change whatever has been made in prices for pure Lead by manufacturers in the "trust" or those outside of it.

Red Lead and Litharge—Are selling at the old range of prices and the demand from large consumers is represented as being full up to the average for the season.

Colors, &c.—Dry colors in general have been rather quiet. Grinders have purchased sparingly because of the slow sales latterly of their goods, and the more staple varieties used by housepainters have been taken in small quantities. Prices show no important variation. Block Chalk is very firmly held at still higher prices, owing to the very moderate stock here. Whiting is also rather firmer, yet without radical change. Paris White moves fairly at about previous prices.

Animal and Vegetable Oils.

Few changes have taken place the past week in the market for Animal and Vegetable Oils, and the general situation is much the same as it was a fortnight ago. In the item of cost of raw materials used in the manufacture of domestic productions there is nothing that points to cheaper Oils, at all events, and imported goods still have more or less support from rather strong advices from the primary markets. The general situation of supplies also continues favorable for steady is not higher prices. Business has not been as lively as could be wished, yet the movement of the leading goods is said to compare favorably with the average for this season and the demand has run remarkably even, particularly from the home trade.

Cotton-Seed Oil.—There have again been very good sales of the inferior grades of Summer Yellow, and prime quality has moved to a good extent also, in part for export. The demand for crude has been remarkably steady and current receipts are closely taken up. Taken as a whole the position of the market appears to be favorable, and prices are firmly held here and in the South.

Linseed.—City brands have been selling rather more freely the past few days, and the market looks fairly brisk at this writing, with some increase in the sales of Western as well as local brands. City Raw Oil goes at 62¢ for domestic and 64¢ for Calcutta seed product.

Lard Oil.—No change has taken place in the market for this lubricant. The cost of raw material continues high and pressers consequently hold for full prices, but demand is hardly brisk enough to impart decided strength to the position. Some of the best city brands are still offering 52¢ in ordinary sized lots.

Fish Oils.—Crude Menhaden Oil is moving very fairly in moderate sized lots, for both home and export account, at practically former prices. There seems to be little interest in Sperm or Whale. The manufactured products, Menhaden more particularly, are having very steady sale at old prices.

Cocoanut Oil.—Ceylon is very firm at the advance quoted last week, but the demand has moderated and is now chiefly for small lots. Several sales were made at 5⅞¢ ex-store.

Olive Oil.—Prices are firmly held at about 92½¢ for unadulterated oil on the spot and the demand is running very fairly. Inferior qualities may be had at slightly lower figures, but they move off slowly.

Among the orders received during the past week by the Lloyd Booth Company, of Youngstown, Ohio, are one 20½-inch three high puddle mill, one three high 12-inch bar mill, one rotary squeezer with gearing, one roll lathe, one rail shear, one muck shear, one bar shear, and one hot saw for the Anniston Rolling Mill Company, Anniston, Ala. Rolls from Kentucky: One No. 2 lever shear for the Pullman Palace Car Company, Pullman, Ill., and one No. 3 lever shear for the Roanoke Rolling Mill Company, Roanoke, Va. The firm have at present under construction six shears, three rotary squeezers, besides a large amount of miscellaneous work for their customers. They will have the addition to their foundry in operation the coming week. It will be equipped with one of W. H. Thompson's 30-ton all-iron steam cranes. They have also made improvements in their brass foundry.

The Mumford Extension Measure.

C. M. Mumford, Springfield, Mass., is putting on the market a novelty in measures, which is illustrated in the accompanying engraving. One side of the measure is graduated to 24 inches and the other, which is shown in the cut, is graduated from 24 to 46 inches, the 22 additional inches representing the length of the extension. It will thus be seen that by

The Mumford Extension Measure.

means of this rule measurements to 46 inches may be maintained. The extension is manipulated by the thumb piece shown, which serves also as the guide in determining measurements. These measures are made in three lengths, 18, 24 and 36 inch, with extensions to 34, 46 and 70 inches respectively.

The Eagle Bicycle.

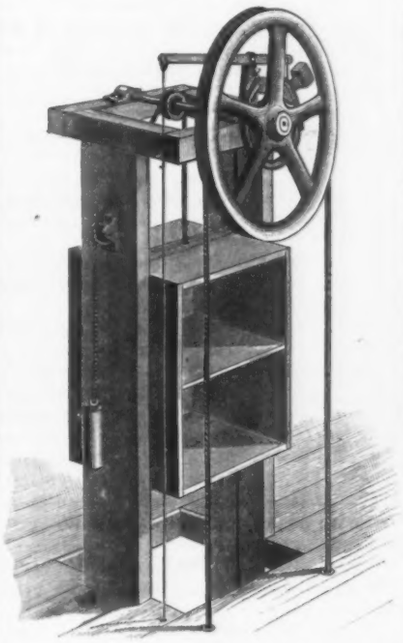
The bicycle represented herewith is manufactured by the Eagle Bicycle Mfg. Company, Stanford, Conn. It will be observed that the machine differs radically from others on the market and that it is exceedingly simple in construction. The dangers attending the ordinary high wheel has driven a large number of riders into the safty ranks, and the Eagle is offered as a machine combining the advantages of both types and affording entire safety from the dreaded header while retaining the charm of the high mount. The framing is light and strong and its construction such as to give, it is claimed, the greatest possible strength for the material used. There are no levers, clutches, chains or other complicated mechanism in the machine and the friction

The Eagle Bicycle.

is thus reduced to a minimum. The manufacturers also call attention to the beauty of the design, the finish and the ease of propulsion, as well as to its strength and durability. The following advantages in addition to those already enumerated are alluded to by the manufacturers. The simple direct crank action; that the rider being directly over his pedals utilizes his whole weight and force in each downward motion; that the weight being altogether on the driving wheel it has perfect traction and it is impossible for the driver to jump or skid, and that the position of the rider is upright and the most natural that it is possible to take, the legs being directly under him. The price of the cycle is $130. An exceptionally complete and detailed description of this machine is given in the company's catalogue, a copy of which may be had by those who desire it.

Dumb Waiter.

The engraving represents a new dumb waiter fixture made in three sizes—capacities 75, 150 and 300 pounds—by the Energy Mfg. Company, of Philadelphia, Pa. The special feature of this fixture is a simple self-acting brake devise which prevents the waiter from lowering except when brake cord is pulled. No clamp is required to hold it in position, the gearing is safe for the full load, yet adapted for the light work of an ordinary waiter. The load may be quickly lowered without touching the hand-rope; the load cannot run away, as the operator stops it by either pulling hard or letting go of brake cord.



Dumb Waiter.

The load can be raised by pulling hand over hand on hand-rope, as waiter is always locked when the hand is released.

The Matchless Repeating Air Rifle.

The Henry C. Hart Mfg. Company, Detroit, Mich., have recently put on the market the air gun represented in the accompanying engraving. The novel feature about this gun is its repeating arrangement. It is provided with a magazine with an opening at the muzzle of the gun alongside of the barrel. Into this magazine a handful of shot can be poured, and from it they are passed one by one into the barrel as required. It is stated that 65 shots can be poured into the magazine at one time, and the gun may thus be discharged 65 times without reloading. This rifle shoots BB shot with much force and accuracy, most of the shots, it is intimated, penetrating an ordinary board at a distance of 50 feet with sufficient force to be embedded in it. The utility of the gun in shooting sparrows, rats, &c., and for target practice is especially pointed out. The stock is described as made of black walnut and the sights are adjustable, the poise of the gun and the ease with which it is brought to the shoulder being alluded to by the manufacturers. It is also urged that this rifle is much more like a weapon and looks less like a toy than other air guns. The rifles are packed each in a separate box, 1 dozen in a case, and the manufacturers will send one of the guns to any address on receipt of $2.50.

The Matchless Repeating Air Rifle.

Copper Tea Kettles.

The Johnson Mfg. Company, Collins, N. Y., are manufacturing a line of all copper tea kettles, an illustration of one style of which is presented herewith. This kettle is made in two pieces, double seamed together above the spout and soldered on the inside, making, it is claimed, a very durable and tight joint. The handles are of heavy brass wire extending through the enameled wood and riveted to the ears, which are so made as to hold the handle up from the breast. This construction is referred to as making a very strong handle and stiff ears, and the handle being held off from the breast the use of a holder is unnecessary, the handle being always cool. The following claims are made for this kettle: That it is made of 14-ounce copper and is the heaviest kettle on the market; that the breast, body, handle, ears and spout are all formed by special machinery made for the purpose, securing great uniformity; that the ears are so made as to prevent the handle from coming in contact with the breast to dent it or become heated. The kettles are also made in three pieces. The catalogue of the company illustrates a varied assort-

Copper Tea Kettles.

ment of copper kettles, coffee boilers, copper measures, funnels, wash boilers, &c.

A Lynchburgh, Pa., paper says the new town of Carnegie, owned by the Pittsburgh Development Company, has been chosen as the site for several large iron

plants of which more will be known soon. A population of 10,000 five years hence is predicted.

The Standard Calf Weaner.

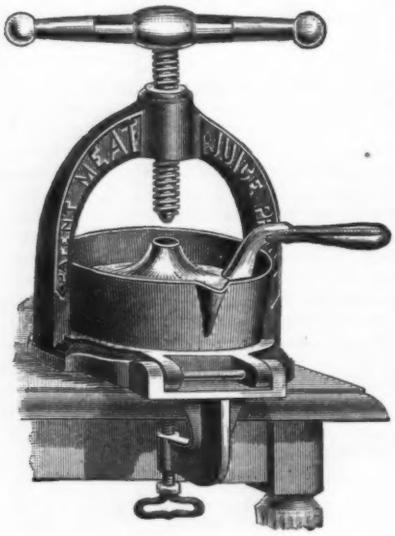
Geo. W. Shirk, 112 Lake street, Chicago, is manufacturing the Standard Calf Weaner, the appearance of which in use is represented herewith. It will be perceived that the cut shows the head in position for feeding and indicates that this is done easily and without annoyance from the weaner When the head is raised in a position to suck the construction of the weaner is such that it autamatically adjusts itself and effectually prevents sucking. The durability of this weaner is emphasized, while it will not seriously injure cow or calf. The weaner proper is made of wire, the halter which sustains it in place being made of leather and steel. The strength and lightness of this weaner, and

The Standard Calf Weaner.

the fact that there is no soldering in its construction or wire loop under the jaw, as well as the low price at which it is offered, are points made in regard to it.

Meat Juice Press.

H. F. Osborne, Newark, N. J., is now putting some patterns of his meat juice press on the market, with clamp attachment, as shown in the accompanying engraving. This attachment permits the use of both hands and thus contributes to the application of increased pressure. It will be remembered that the bottom of the cup is convex and the cover concave,

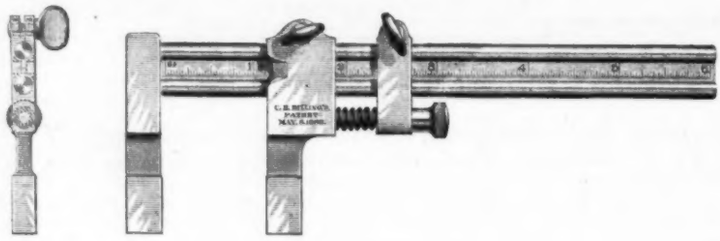


Meat Juice Press.

facilitating the extraction of the juice. The ease with which the press is operated and the simplicity of its construction are also referred to. Sizes No. 2 and No. 3, for family and hospital respectively, are made with this clamp attachment, No. 1, individual size, being offered in the original form.

Billings' Patent Beam Caliper.

This article is represented half size in the accompanying engraving and is manufactured and put on the market by Billings & Spencer Company, Hartford, Conn. It is stated that the object of the design of this tool is to produce a caliper square possessing the minimum of weight with the maximum of stiffness and durability. The entire caliper is described as made of steel, the jaws being hardened and ground, and the construction is such that it protects



Billings' Patent Beam Caliper.

the scale from all wear and abrasion. The scale is divided into sixty-fourths of an inch on one side and hundredths of an inch on the other. The accuracy of the graduation and the finish of the tool are alluded to by the manufacturers. Its price is $6.

SOUTHERN MISCELLANY.

At Bluffton, Ala., $125,000 has been subscribed to a $200,000 stock company, to build a rolling mill.

A foundry and manchine shop will be established at Dallas, Texas, by the Mosher Mfg. Company.

An agricultural-implement factory will be started at Jackson, Tenn.

The negotiations which have been pending at New England City, Ga., for the purchase of large tracts of iron and coal lands have terminated favorably.

At Bessemer, Ala., the Bessemer Tool Works Company have been organized. J. N. Jenkins is president; A. J. Robinson, vice-president, and H. C. Blake, general manager.

The Cleveland, Tenn., Stove Works will increase its capacity to twice its present size.

The West Huntsville Land and Improvement Company, of Huntsville, Ala., have given out a contract for the erection of an iron furnace.

Baltimore capitalists intend developing mineral properties near Hall's Mills, Ga.

A company are said to be organizing at Sheffield, Ala., to establish extensive tool and fork works at that place.

A $25,000 machine shop and foundry is being located at Americus. Ga., by C. M. Wheatby, who will do a novelty manufacturing business.

New iron properties are being opened by the Alabama Furnace Supply Company at Sheffield, Ala., and are in the market for additional machinery.

Two additional furnaces are proposed at Sheffield.

The works of the Cartersville, Ga., Ochre Company are to be enlarged, and the capital stock increased to $200,000.

New iron mines are to be opened by the Gadsden, Ala., Furnace Company.

Among the new industries at Aberdeen, Miss., is a foundry and machine shop.

At Baltimore, the North Star Iron Company, with a capital stock of $5,000,000, has been incorporated by B. N. Baker, G. C. Jenkins and others, of Maryland, and John Reilly, of Pennsylvania.

Terre Haute capitalists contemplate establishing a $50,000 engine, boiler and foundry works at Sheffield, Ala.

Machine shops are to be added to J. H. Gilson's iron foundry at Waycross, Ga.

It is said that Mitchell Renz, of Washington, D. C., contemplates building an aluminum plant somewhere in the South, most probably Georgia.

At Selina, Ala., George Peacock is making additions to his iron foundry.

Indiana capitalists are trying to organize a $400,000 car works at Sheffield.

It is reported that the Georgia, Tennessee and Illinois Railroad Company will establish machine shops at Tallapoosa, Ga.

J. H. Choat, of Kansas, is the general manager of the newly incorporated Iron City Coal, Land and Improvement Company, of Attalla, Ala. His company has a capital stock of $300,000, which will be increased to $500,000. A 100-ton furnace is to be built. The company owns 20,000 acres of coal lands.

A site has been purchased for the recently organized Atlanta Car Works.

Car shops are to be erected at Troy, Ala., by the Alabama Midland Railroad Company.

An iron furnace is to be built at Barbourville, Ky.

A company, with a capital stock of $200,000, is being formed among Baltimore capitalists to erect an iron works at Center Bay, Md.

A company will build an agricultural implement works at Montgomery, Ala.

It is reported that two iron furnaces are to be built at Cranberry, N. C., by the East Tennessee and Western North Carolina Railroad Company.

A plan is on foot at Sheffield, Ala., between the Alabama Development Company and the Birmingham, Sheffield and Tennessee River Railroad Company to buy the property of the Sheffield and Birmingham Coal, Iron and Railway Company. The name of the new concern is proposed to be the Phœnix Iron Company.

A syndicate is negotiating at Charleston, S. C., for the establishment of a $1,000,000 car works and car-wheel plant.

It is stated that an iron furnace will probably be built at Athens, Tenn.

The Birmingham Bridge and Bolt Works, of Birmingham, Ala., has been bought by the Towers Hardware Company. The plant is to be considerably enlarged.

A 70-ton iron furnace will be erected at Atlanta, Texas.

A plow works will be established at Woodruff, S. C., by L. C. Ezell and others.

More machinery will be added to the plant of the Bristol Foundry and Machine Company, at Bristol, Tenn.

Chattanooga parties have formed the Gunters Mountain Iron, Coal and Railway Company at Swearengin, Ala., with a capital stock of $1,000,000, and owning 20,000 acres of iron, manganese and coal properties.

A Dayton, Ohio capitalist will establish machine works at Morristown, Pa., to manufacture mowing machines.

An iron foundry and machine shops are to be started at Sulphur Springs, Texas, by G. B. Boomer.

The capital stock of the new company recently incorporated to build a furnace at Sylacauga, Ala., is $1,000,000. The

Nobles of Anniston, and D. T. Parker, the well-know banker are among the incorporators.

It is said that the Talladega Iron and Steel Company, of Talladega, Ala., will build a steel plant.

The Lone Star Iron Company, of Jefferson, Texas, has recently entered into a contract with James Cooper, of Fort Worth, for supplies of iron ore.

At Fort Worth, Texas, the Thorn Type-Setting Machine Company, with a capital stock of $200,000 has been incorporated, with T. J. Hurley as president; E. G. Senter, vice-president, and J. M. Conner, secretary.

A 150-ton coke furnace will be erected at Shelby, Ala., by the Alabama Coal and Iron Company.

Large bodies of iron ore land have been bought, it is said, by the Pennsylvania Iron and Steel Company, of Talladega, Ala. A site for this company's proposed furnace has been selected.

At Tallahassee, Fla, the Eureka Machine Works are to establish a plant.

Ex-Gov. Charles Foster, of Ohio, and U S. Senator-elect Calvin F. Brice, and other Ohio capitalists have purchased 24,000 acres of coal land and 6000 acres of iron land adjoining the town of Trenton, Ga. The company is capitalized at $1,000,000. Arrangements are being made for building one or more furnaces.

A rapidly developing iron town of Alabama is Jacksonville, which has recently changed its name to Tredegar. Negotiations are now being made which will result in the establishment there of one 50-ton coke furnace and a 70-ton charcoal furnace.

The stock company recently organized at Chattanooga by J. L. Divine, R. V. Harden, D. W. K. Polk and others for the manufacture of a sewing machine motor, will be known as the Universal Sewing Machine Motor Attachment Company.

Gordon McKay, of Boston, Mass., has purchased the Cochran iron mines, near Rockmart, Ga., and will develop them.

It is said that the Duvall Engine and Foundry Works, of Zanesville, Ohio, are to be moved to Shennan, Texas.

A new boiler will be added to the plant of the Dixie Dynamite Company at Chattanooga, Tenn.

The recent experimentation with Talladega iron in the steel bloomery at Anniston, Ala., is declared to have been highly satisfactory. Some of the blooms made from this iron were sent to Chattanooga to be rolled, others were sent to the chemist of the Talladega Iron Company, who gave the following as the result of his analysis: Phosphorus, 0.03 per cent.; carbon, 0.2 per cent.; silica, 0.1 per cent. A letter from Mr. John Lancaster, the manager of the company, states that he regards it as fine steel—lower than the test required by the Government for boiler plate. It is claimed that the phosphorous can be still farther eliminated from the Talladega iron after the bloomery has been running a greater length of time.

The Anniston Bloomery proposes the putting in of roll trains.

Ohio parties are reported to be negotiating for the establishment of a steel and iron plant at Sherman, Texas.

Still another steel plant for the South is among the industrial possibilities of the near future. A syndicate of Eastern capitalists are negotiating with citizens of Johnson City, Tenn., looking to the establishment in that place of steel works.

At Chattanooga the iron-working firm of Gibson & Co., are making arrangements for the establishment of malleable iron works.

The finishing touches are almost ready to be given to the new Chicamauga Foundry and Machine Shops, which are now being completed at Chattanooga by Whiteside & Wheeland. The machinery is now being placed in position in the foundry building.

The Coal and Iron Company, of Attalla, Ala., have been organized with a capital stock of $500,000.

A new machine shop and foundry will be built at San Antonio, Texas, by George Holengreen & Sons.

At Mt. Sterling, Ky., a company is being formed to manufacture plows on an extensive scale.

The capital stock of the Phillips-Buttorff Stove and Tinware Mfg. Company, at Nashville, Tenn., has been increased to $50,000, and a probable enlargement of their plant will ensue.

A company to manufacture hardware is said to be forming at Harriman, Tenn.

The Anniston, Ala., Pipe Works, is enjoying a good business just now, and is turning out a daily product of 75 tons, which is claimed to be far below the demand.

Last week was begun the erection of the steel mill of the Southern Iron Company, at Chattanooga. Two 20-ton Basic-Siemen furnaces are to be built immediately.

A new iron town to be built in the South is Cardiff, Tenn. The Cardiff Coal and Iron Company have been organized by Hon. William Warner, of Kansas City; Ex-Gov. Pingree, of Vermont; Hon. John M. Whiffle, of Claremont, N. H.; Hon. Carlos Heard, of Biddeford, Me.; Hon. Robert Pritchard, of Chattanooga, and many others equally as prominent. The capital stock of the new company is $5,000,000. An extensive tract of coal, iron and timber properties has been purchased. A furnace and a coke plant is to be built during the present year. This is one of the strongest companies ever organized to promote an industrial enterprise in the South.

PERSONAL.

William D. Sheaffer, of Reading, Pa., has taken full charge of the F. S. Allison Iron Foundry, at Minersville, Pa., in place of Daniel Liddel

William T. Ellis, roadmaster of the Worcester Division of the New York, Providence and Boston Railroad, tendered his resignation last week, to take effect on April 5. Mr. Ellis has accepted a position with the Dunham Mfg. Company, of Boston, dealers in railroad specialties. He will be traveling agent for these goods, and will leave for the Pacific coast in about a couple of weeks, for a four months' trip. His territory is the Southwestern part of the United States, the Pacific coast and Mexico.

Charles S. Nichols, of the Nichols & Langworthy Machine Company, of Hope Valley, R. I., is painfully and dangerously ill with sub-acute rheumatism.

Hon. Bradley B. Smalley, of Burlington, Vt., has been elected president of the Cardiff Coal and Iron Company, of Cardiff, Tenn. Mr. Smalley is president of the Ogdensburg, and Lake Champlain Railroad, vice-president of the Burlington Trust Company, a director of the Howard National Bank, of Burlington, and of the Welder National Bank, of St. Albans; secretary of the National Democratic Committee, and an ex-Collector of Customs at Burlington.

Walter Scranton, the New York representative of the Scranton Steel Company, who has been ill during the past two weeks, is recovering.

B. G. Clarke, president of the Lackawanna Coal and Iron Company and of the Thomas Iron Company, has returned to New York from a Southern trip.

E. T. Lehman, of Naylor & Co., has returned to New York from an inspection of the property of the Colorado Coal and Iron Company.

CONTENTS.

CURRENT HARDWARE PRICES.

APRIL 2, 1890.

Note.—The quotations given below represent the Current Hardware Prices which prevail in the market at large. They are not given as manufacturers prices, and manufacturers should not be held responsible for them. In cases where goods are quoted at lower figures than the manufacturers name, it is not stated that the manufacturers are selling at the prices quoted, but simply that the goods are being sold, perhaps by the manufacturers, perhaps by the jobbers, at the figures named.

Adjusters, Blind.

Domestic ..... ℔ doz $3.00, 33⅓%
Excelsior ..... ℔ doz $10.00 ..... 50&10&2%
Washburn's Self-Locking ..... 20@20&10%

Ammunition.—

Caps, Percussion, ⅋ 1000—
Hicks & Goldmark's and Union Metallic Cartridge Co.
F. L. Waterproof, 1-10's ..... 34@35¢
E. B. Trimmed Edge, 1-10's ..... 46@48¢
E. B. Grnd. Edge, Cent. Fire, 1-10's ..... 46@47¢
Musket Waterproof, 1-10's ..... 50¢
G. D. ..... 28¢
S. B. Genuine Imported ..... 45¢
Eley's E. B. ..... 54¢ @ 55¢
Eley's D Waterproof, Central Fire $1.60

Cartridges—
Rim Fire Cartridges ..... 50&5&2%
Rim Fire Military ..... 15&2%
Cent. Fire, Pistol and Rifle ..... 25&5&2%
Cent. Fire, Military and Sporting ..... 15&5&2%
Blank Cartridges, except 22 and 32 cal., additional 10% on above discounts.
Blank Cartridges, 22 cal., $1.75 ..... 2%
Blank Cartridges, 32 cal., $3.50 ..... 2%
Primed Shells and Bullets ..... 15&5&2%
B. B. Caps, Round Ball, $1.75 ..... 2%
B. B. Caps, Con. Ball, Swgd., $2.00 ..... 2%

Primers—
Berdan Primers, $1.00 ..... 2%
B. L. Caps (for Sturtevant Shells) $1.00, 2%
All other Primers, $1.20 ..... 2%

Shells—
First quality, 4, 8, 10 and 12 gauge ..... 25&10&2%
First quality, 14, 16 and 20 gauge ($10 list) ..... 30&10&2%
Star, Club, Rival and Climax brands, ... 33⅓&10&2%
Seibold's Comb. Shot Shells ..... 15&2%
I X L, 10 and 12 guage ..... 40&5&2%
"Special," 16 gauge ..... 30&15&5&2%
"Special," 10 and 12 gauge ..... 40&10&2%
Fowler's Pat $3.25
Brass Shot Shells, 1st quality ..... 60&2%
Brass Shot Shells, Club, Rival, Climax .. 65&2%

Shells Loaded—
Standard. List ..... 40@40&10&5%

Wads—Price per M.
U.M.C.&W. R. A.—B. E., 11 up... 68¢
U.M.C.&W. R. A.—B. E., 9&10... 82¢
U.M.C.&W. R. A.—B. E., 8..... 90¢
U.M.C.&W.R. A.—B. E., 7..... $1.10
U.M.C.&W. R. A.—P. E., 11 up.. 1.15
U.M.C.&W. R. A.—P. E., 9&10.. 1.50
U.M.C.&W. R. A.—P. E., 8..... 1.70
U.M.C.&W.R. A.—P. E., 7..... 1.80
Dis. 20&3
Eley's B. E., 11 up $1.75
Eley's P. E., 11@20 ..... 2.80

Anvils.—

Eagle Anvils ℔ ℔ 10¢ ..... 15@15&5%
Peter Wright's ..... 10½¢
Armitage's Mouse Hole ..... 9¢
Armitage's Mouse Hole, Extra ..... 11½¢
Trenton ..... 9½@10¢
Wilkinson's ..... 9¾@10¢
J. & Riley Carr, Pat. Solid ..... 11@11½¢
Moore & Barnes Mfg. Co 33⅓%

Anvil Vise and Drill—
Millers Falls Co., $18.00 ..... 20%
Cheney Anvil and Vise 25%
Allen Anvil and Vise, $3.00 ..... 40&10%
Star ..... 45&5%

Apple Parers—See Parers, Apple, &c.

Augers and Bits—

Douglass Mfg. Co.
Wm. A. Ives & Co.
Humphreysville Mfg. Co.
French, Swift & Co. (F. H. Beecher, P. S. & W. Co.
Rockford Bit Company
70%
Cook's, Douglass Mfg. Co 55%
Cook's, N. H. Copper Co. 50&10&50&10&5%
Ives' Circular Lip 60%
Patent Solid Head 30%
C. E. Jenning & Co., No. 10, extension lip 40%
C. E. Jennings & Co., No. 30 ..... 60%
C. E. Jennings & Co., Auger Bits, ℔ set, 32½ quarters, No. 5, $5; No. 30, $3.50 ..... 20%
Lewis' Patent Single Twist 45%
Russell Jennings' Augers and Bits ..... 25&10%
Imitation Jennings' Bits ..... 60@60&5%
Snell's Jennings Pattern 60%
Pugh's Black 20%
Rockford, Jenning's Pattern 60%
Car Bits ..... 50&10@60%
Car Bits, P. S. & W. Co ..... 60&10%
Snell's Car Bits 60%
L Hommodieu Car Bits ..... 15&10%
Forstner Pat. Auger Bits 10%
Cincinnati Bell-Hangers' Bits 30%

Bit Stock Drills—
Morse Twist Drills ..... 50&10&5%
Standard ..... 50&10&5%
Cleveland ..... 50&10&5%
Syracuse, for metal ..... 50&10%
Syracuse, for wood (wood list) ..... 30@30&5%
Williams' or Holt's, for metal. 50&10&10%
Williams' or Holt's, for wood ..... 40&10%
Cincinnati, for wood ..... 30&5%
Cincinnati, for metal ..... 40&10

Expansive Bits—
Clarks' small, $18; large, $26 ..... 35@35&5%
Ives' No. 4, ℔ doz $60 ..... 40%
Swan's 40%
Steer's, No. 1, $26; No. 2, $22 ..... 35%
Stearns' No. 2, $48 ..... 20%

Gimlet Bits—
Common ..... ℔ gross $2.75@$3.25
Diamond ..... ℔ doz $1.10 ..... 25&10%
Ree ..... 25@25&5%
Double Cut Shepardson's ..... 45@45&10%
Double Cut, Ct. Valley Mfg. Co ..... 30&10%
Double Cut, Hartwell's, ℔ gro $5.25
Double Cut, Douglass' ..... 40&10%
Double Cut, Ives' ..... 60@60&10%

Hollow Augers—
Ives ..... 33⅓ @ 33⅓&10%
French, Swift & Co. ..... 33⅓ @ 33⅓&10%
Douglass'
Bonney's Adjustable, ℔ doz $48 ..... 40&10%
Stearns' ..... 20&10%
Ives' Expansive, each $4.50 ..... 50&5%
Universal Expansive, each $4.50 ..... 20%
Wood's ..... 25@25&10%
Cincinnati Adjustable ..... 30@30&5%
Cincinnati Standard ..... 25&10%

Ship Augers and Bits—
L'Hommedieu's ..... 15&10@15&10&5%
Watrous' ..... 15&10@15&10&10%
Snell's ..... 15&10@15&10&5%
Snell's Ship Auger Patt'n Car Bits, 15&10@15&10@5%

Awl Hafts—See Hafts, Awl.

Awls, Brad Sets, &c—

Awls, Sewing, Common ℔ gr $1.70, 35%
Awls, Should. Peg. ℔ gr $2.45, 40@40&10%
Awls, Pat. Peg... ℔ gr 63¢ ..... 40@40&10%
Awls, Shouldered Brad .. 2.70 ℔ gr 35%
Awls, Handled Brad ... $7.50 ℔ gr 45%
Awls, Handled Scratch ℔ gr, $7.50. 35&10%
Awls, Socket Scratch, ℔ doz, $1.50. 25@30%

Awl and Tool Sets—See Sets, Awl and Tool.

Axes—

	Plain.	Beveled.
First quality	$8.00	$8.50
Others	7.50	8.00

Note.—Jobbers often sell at lower prices than the above.

Axle Grease—See Grease, Axle.

Axles—

No. 1, 4¼@5¢, No. 2 5½@6¼¢ } 3% cash
Nos. 7 to 14 ..... 55&5%
Nos. 15 to 18 ..... 47½%
Nos. 19 to 22 ..... 70%
National Tubular Self-Oiling: Standard Farm (1 to 5) and Special Farm (A1 to A5):
Less than 10 sets 33⅓%
Over 10 sets ..... 33⅓&5%

Bag Holders.—See Holders, Bag.

Balances—

Spring Balances 50%
Common 24-℔ ..... ℔ doz $1.50 ..... 50%
Chatillon's Spring Balances 50%
Chatillon's Circular Spring Balances. 60%

Bars.

Crow—
Cast Steel ..... ℔ ℔ 4¼¢
Iron, Steel Points ..... ℔ ℔ 3¾¢

Basins, Wash—

Standard Fiberware, No. 1, 10½-inch, $2; 12-inch, $2.25; 13½-inch, $2.75; 15-inch, $3.25.

Beams, Scale—

Scale Beams, List Jan. 12, '82 ..... 50&10@50&10&5%
Chatillon's No. 1 ..... 40%
Chatillon's No. 2 ..... 50%

Beaters, Egg, &c—

Keystone, P.D.&C., Each, No. 1, $1; No. 2, $2 ..... 25%
Dover ..... ℔ doz $1.50
National, ℔ doz $4.50 ..... 33⅓%
Family (T. & S. Mfg. Co.), ℔ gro $17.00@$18.00
Duplex (Standard Co.) ..... ℔ doz $1.25
Rival (Standard Co.) ..... ℔ doz $1.00
Duplex Extra Heavy (Standard Co.) ..... ℔ doz $3.50
Triumph (T. & S. Mfg. Co.), ℔ gro $10.50@$11.50

Advance, No. 1 ..... ℔ gro $10.50
Advance, No. 2 ..... ℔ gro $10.00
Bryant's ..... ℔ gro $14.00
Ayres' Spiral ..... ℔ gro $5.00
Double (H. & R. Mfg. Co.) ..... ℔ gro $16.20
Easy (H. & R. Mfg. Co.) ..... ℔ gro $14.00
Triple (H. & R. Mfg. Co.) ..... ℔ gro $16.20
Spiral (H. & R. Mfg. Co.) ..... ℔ gro $4.50
Paine, Diehl & Co.'s ..... ℔ gro $24.00

Bells—

Cow—
Common Wrought ..... 60&10%
Western ..... 20&10%
Western, Sargent's list ..... 70&10%
Kentucky, "Star" ..... 20&10%
Kentucky, Sargent's list ..... 70&10%
Dodge, Genuine Kentucky ..... 70&70&10%
Texas Star ..... 50&10@50&10&5%
Call ..... 40@40&5%
Farm Bells ..... ℔ ℔ 8¢@3¼¢
Steel Alloy Church and School Bells .. 40%

Door—
Gong, Abbe's ..... 33⅓&10%
Gong, Yankee ..... 45&10%
Gong, Barton's ..... 40&10@50%
Crank, Taylor's ..... 25&10%
Crank Brooks' ..... 50&10&2%
Crank Cone's 10%
Crank, Connel's ..... 20&10%
Lever, Sargent's ..... 60&10%
Lever, Taylor's Bronzed or Plated ..... net
Lever, Taylor's Japanned ..... 25&10%
Lever, R. E. M. Co.'s ..... 50&10&2%
Pull, Brook's ..... 50&10&2%
Pull, Western ..... 25&10%

Electric,
Wollensak's 20%
Bigelow & Dowse 20%
Taylor's 20%

Hand—
Light Brass ..... 70&10@75%
Extra Heavy ..... 60&10%
White Metal ..... 60&10&10%
Silver Chime ..... 33⅓&10%
Globe (Cone's Patent) ..... 25&10@35%

Bellows—

Blacksmiths' ..... 60@60&5%
Molders' ..... 40@40&10%
Hand Bellows ..... 40&10@50%

Belting, Rubber—

Common Standard ..... 70&10%
Standard ..... 70&70&5%
Extra ..... 60&5@60&10%
N. Y. B. & P. Co., Carbon ..... 60&10&5%
N. Y. B. & P. Co., Diamond ..... 50&10%

Bench Stops—See Stops, Bench.

Benders, Upsetters, Tire.

Stoddard's Lightning Tire Upsetters .. 15%
Detroit Perfected Tire Bender 15%

Bits—

Auger, Gimlet, Bit Stock, Drills, &c., see Augers and Bits.

Bit Holders—See Holders.

Blind Adjusters—See Adjusters, Blind.

Blind Fasteners See Fasteners, Blind.

Blind Staples—See Staples, Blind.

Blocks—

Ordinary Tackle, list May 20, 1889 ..... 50@50&10%
Cleveland Block Co., Mal. Iron 50%
Moore's Novelty, Mal. Iron 50%

Bolts—

Carriage, Machine, &c.—
Com. list June 10, '84 ..... 70&12½&2%
Genuine Eagle, list Oct., '84 .. 75&10@80%
Phila. pattern, list Oct. 7, '84 .. 80@80&10%
R.B.&W., old list 70%
Machine, list Jan. 1, 1890 ..... 75&10
Bolt Ends, list Jan. 1, 1890 ..... 75&10

Door and Shutter—
Cast Iron Barrel, Square, &c .. 70@70&10%
Cast Iron Shutter Bolts ..... 70@70&10%
Cast Iron Chain (Sargent's list) .... 65&10%
Ives' Patent Door Bolts 60%
Wrought Barrel ..... 70@70&10%
Wrought Square ..... 70@70&10%
Wr't Shutter, all Iron, Stanley's .. 60&10%
Wr't Shutter, Brass Knob, " .. 40&10%
Wr't Shutter, Sargent's list ..... 60&10%
Wr't Sunk Flush, Sargent's list ... 55&10%
Wr't Sunk Flush, Stanley's list ... 50&10%
Wr't B.K.Flush, Com'n " .... 55&10%

Stove and Plow—
Stove 60%
Plow ..... 60&5%
R. B. & W., Plow 55%

Tire—
Common, list Feb. 28, '83 ..... 65%
Port Chester Bolt and Nut Company:
Empire, list Feb 28, '83 ..... 65%
Keystone, Philadel., list Oct. '84 .. 80%
Norway, Phila., list Oct. '84 ..... 75%
American Screw Company:
Norway, Phil., list Oct. 16, '84 ..... 75%
Eagle, Phil., list Oct. 16, '84 ..... 80%
Philadel., list Oct. 16, '84 ..... 80%
Bay State, list Feb. 28, '83 ..... 65%
R.B.&W., Philadel., list Oct. 16, '84 ..... 80%

Borers, Tap.

Common and Rind ..... 20&10%
Ive's Tap Borers ..... 33⅓&5%
Enterprise Mfg. Co ..... 30&10@30%
Clark's ..... 33⅓@35%

Borax ..... ℔ ℔ 9½@10½¢

Boring Machines—See Machines, Boring.

Bow Pins—See Pins, Bow.

Boxes, Wagon.

Per ℔ ..... 2¾¢

Braces.—

Amidon's
Barker's Imp'd Plain ..... 75&10@80%
Barker's Imp. Nickeled .... 65&10@70%
Ratchet ..... 75&10@80%
Eclipse Rachet 60%
Globe Jawed ..... 40@40&10%
Corner Brace ..... 40@40&10%
Universal, 8 in., $2.10 10 in $2.25
Buffalo Ball ..... $1.10@$1.15
P. S. & W. Co., Peck's Patent 60%
Barber's,
Nos. 10 to 16 ..... 50%
Nos. 30 to 33 ..... 60%
Nos. 40 to 63 ..... 50&10%
Barker's,
Nos. 8, 10 and 12 ..... 75&10@80%
Plated, Nos. 8, 10 and 12 .... 65&10@70%
Bartholomew's,
Nos. 25, 27 and 30 ..... 50&10@60&5%
Nos. 117, 118, 119 ..... 70@70&5%
Common Ball, American ..... $1.00@$1.10
Ives' New Haven Novelty ..... 70@70&5%
New Haven Ratchet ..... 60&5@60&10%
Barber Ratchet ..... 60&5@60&10%
Barbers ..... 60&5%
Spofford ..... 60&5@60&10%
Osgood's Ratchet ..... 40&10@50%
Spofford's ..... 50&5@50&10%

Brackets—

Shelf plain, Sargent's list, 55&10@55&10&10%
Shelf, fancy, Sargent's list, 60&10@60&10&10%
Reading, plain ..... 50&10@60&10&5%
Reading, Rosette ..... 60&10@60&10&10%

Bright Wire Goods—See Wire.

Broilers—

Henis' Self-Basting. } Inch 9 10 9x11
Per doz. $4.50 5. 6.50

Buckets, Well.

Galvanized—
Hill's ..... ℔ doz, 12 qt, $4.25; 14 qt, $5.25
Iron Clad ..... ℔ doz, 14 qt, $4.25@$4.50
Whiting's Flat Iron Band ..... $4.25@$4.50
Whiting's Wired Top .. ℔ doz $4.00@$4.25

Bull Rings—See Rings, Bull.

Butcher's Cleavers—See Cleavers, Butchers'.

Butts—

Brass—
Wrought Brass ..... 75@75&10%
Cast Brass, Tiebout's' 50%
Cast Brass, Corbin's, Fast ..... 33⅓&10%
Cast Brass, Loose Joint ..... 33⅓&10%

Cast Iron—
Fast Joint, Narrow ..... 50&10&5@60%
Fast Joint, Broad ..... 50&10@60%
Loose Joint.
Loose Joint, Japanned
Loose Joint, Jap. with Acorns.
Parliament Butts ..... .70&5@
Mayer's Hinges ..... 70&10%
Loose Pin, Acorns
Loose Pin, Acorns, Japanned
Loose Pin, Acorns, Japanned, Plated Tips

Wrought Steel—
Fast Joint, Narrow
Fast Joint, Lt. Narrow
Fast Joint, Broad
Loose Joint, Broad ..... .70&5@
Table Butts, Back Flaps, &c ..... 70&15%
Inside Blind, Regular
Inside Blind, Light
Loose Pin
Bronzed Wrought Butts 50%

Calipers—See Compasses.

Calks, Toe—

Gautier ..... ℔ ℔ 5½@6¢
Dewicks (Burke) ..... ℔ ℔ 5½@6¢

Can Openers—See Openers, Can.

Cards—

Horse & Curry ..... 10&10@10&10&10%
Cotton ..... 10@10&10%
Wool ..... 10@10&10%

Carpet Stretchers—See Stretchers Carpet.

Carpet Sweepers—See Sweepers Carpet.

Cartridges—See Ammunition.

Casters—

Bed ..... } Brass ..... 55@55&10%
Plate ..... } Others ..... 60@60&10%
Shallow Socket ..... 40&10%
Deep Socket ..... 40&10%
Yale Casters, list May, 1884 ..... 30&10@40%
Yale, Gem ..... 60@60&5%
Martin's Patent (Phœnix) ..... 45&10@50%
Payson's Anti-friction ..... 60@60&10%
Giant Truck Casters 30%
Stationary Truck Casters ..... 50&10%
Socket Truck Casters 50%

Cattle Leaders—See Leaders, Cattle.

Chain—

Trace, 6½-10-2, exact, ℔ pair, $1.05 ..... 50&10@50&10&5%
Trace, 6½-10-3, exact, ℔ pair 92¢ ..... 50&10@50&10&5%
Trace, 7-10-2, exact, ℔ pair $1.11 ..... 50&10@50&10&5%
NOTE.—Traces, "Regular" sizes, 3¢ net ℔ pair less than exact.
Log, Fifth, Stretcher, and other fancy Chains, List Nov. 1, 1884 ..... 50&10@50&10&5%

American Coil, in cask lots,

3-16	¼	5-16	⅜	7-16	½	⅝	¾
$8.00	5.70	4.80	4.30	3.90	3.75	3.65	3.55

Less than cask lots, add ½@1¼¢ ℔.
German Coil, list of June 20, 1887 ..... 50&10&5@60%
German Halter Chain, list of June 20, 1887 ..... 50&10&5@60%
Covert Halter ..... 60&2%
Covert Traces ..... 35&2%
Oneida Halter Chain ..... 60@60&5%
Galvanized Pump Chain ..... ℔ ℔ 5½@6¢
Jack Chain, Iron ..... 75&5@75&10%
Jack Chain, Brass ..... 70&10@75%

Chalk—

White ..... ℔ gr 50¢
Red ..... ℔ gr 70¢
Blue ..... ℔ gr 85¢
See also Crayons.

Chalk Lines—See Lines.

Chisels—

Socket Framing and Firmer.
P. S. & W.
New Haven
Witherby
Mix
Ohio Tool Co. ..... .75 @ 75&10
Douglass ..... 75@75&5%
Buck Bros. 30%
Merrill ..... 60&10@60&10&5%
L. & I. J. White ..... 80@80&5%

Tanged and Miscellaneous.
Tanged Firmers ..... 40&10@50%
Butchers' ..... $4.75@$5.00
Spear & Jackson's ..... $5 to $
Buck Bros. 30%
Cold Chisels, ℔ ℔ ..... 16@10%

Chucks—

Beach Pat.....each, $8.00.....20%
Morse's Adjustable,each, $7.00, 20@20&5%
Danbury.....each, $6.00, 30@30&5%
Syracuse, Bals Pat.....25%
Skinner's Pat. Drill Chucks.....30%
Skinner's Independent Lathe Chucks.40%
Skinner's Pat. Comb. Chuck.....40%
Union Mfg. Co.,
Victor.....$8.50, 25%
Combination.....40%
Universal.....40%
Independent.....40%

Clamps—

R. I. Tool Co.'s Wrought Iron.....25%
Adjustable, Cincinnati.....15&10%
Adjustable, Hammers.....15%
Adjustable, Stearn's.....20&10%
Stearn's Adjustable Cabinet and Corner.....20&10%
Cabinet, Sargent's.....60%&10%
Carriage Makers', Sargent's.....70&10%
Carriage Makers', P., S. & W. Co..40&10%
Eberhard Mfg. Co.....40&5@40&10%
Warner's.....40&10@40&10&5%
Saw Clamps, see Vises. Saw Filers'.
Carpenters', Cincinnati.....15%

Cleavers.

Butchers'.
Bradley's.....25@30%
L. & I. J. White.....20&5%
Beatty's.....40@40&5%
New Haven Edge Tool Co.'s.....40%
P., S. & W.....33⅓&5@33⅓&10%
Foster Bros.....30%
Schulte, Lohoff & Co.....40@40&5%

Clips—

Norway, Axle, ¼ & 5-16.....55&5&5%
2nd grade Norway Axle, ¼ & 5-16 65&5%
Superior Axle Clips.....60%&5&70%
Norway Spring Bar Clips, 5-16..60&5&5%
Wrought-Iron Felloe Clips.....₩ lb, 5½¢
Steel Felloe Clips.....₩ lb, 5¢
Baker Axle Clips.....52¢

Cloth and Netting, Wire—See Wire, &c.

Cockeyes.....50%

Cocks, Brass.

Hardware list.....50&2%

Coffee Mills—See Mills, Coffee.

Collars, Dog, &c.

Medford Fancy Goods Co.....40&10%
Embossed, Gilt, Pope & Steven's list 30&10%
Leather, Pope & Steven's list.....40%
Brass, Pope & Steven's list.....40%

Combs, Curry.

Fitch's.....50&10@50&10&10%
Rubber, per doz $10.00.....20%
Perfect.....50%

Compasses, Dividers, &c.—

Compasses, Calipers, Dividers.70@70&10%
Bemis & Call Co.'s
Dividers.....60&5%
Compasses & Calipers.....50&5%
Wing and Inside or Outside.....50&5%
Double.....60%
(Call's Pat. Inside).....30%
Excelsior.....50%
J. Stevens & Co.'s.....25&10%
Starrett's
Spring Calipers and Dividers 25&10&10%
Lock Calipers and Dividers.....25&10%
Combination Dividers.....25&10%

Coopers' Tools—See Tools, Coopers'.

Cord, Sash—

Common.....₩ lb 10@11¢
Patent, good quality.....₩ lb 13@13½¢
White Cotton Braided, fair...₩ lb 28@29¢
Common Russia Sash.....₩ lb 13½¢
Patent " " .....₩ lb 15¢
Cable Laid Italian Sash.....₩ lb 22@23¢
Indian Cable Laid " ... .₩ lb 13¢
Silver Lake—
A Quality, White, 50¢.....10&10&5%
A Quality, Drab, 55¢.....10&10&5%
B Quality, White, 50¢.....28@30%
B Quality, Drab, 55¢.....31@33%
C Quality, White (only).....26½@28¢
Sylvan Spring, Extra Braided, White, 34¢
Sylvan Spring, Extra Braided, Drab..39¢
Semper Idem, Braided, White.....30¢
Egyptian, India Hemp, Braided.....25¢
Samson—
Braided, White Cotton, 50¢...30@30&5%
Braided, Drab Cotton, 55¢....30@30&5%
Braided, Italian Hemp, 55¢...30@30&5%
Braided, Linen, 80¢.....30@30&5%

Corkscrews—See Screws, Cork.

Corn Knives and Cutters—See Knives, Corn.

Crackers, Nut—

Table (H. & B. Mfg. Co.).....40%
Blake's Pattern.....₩ doz $2.00, 10%
Turner & Seymour Mfg. Co.....50%

Cradles—

Grain.....50&5&2@50&10&2%

Crayons.

White Crayons, ₩ gr, 12¢@12½¢.....10%
D. M. Stewart Mfg. Co., Metal Workers, ₩ gr, $2.50.....25%
D. M. Stewart Mfg. Co., Rolling Mill, ₩ gr, $2.50.....25%
See also Chalk.

Crow Bars—See Bars, Crow.

Curry Combs—See Combs, Curry.

Curtain Pins—See Pins Curtain.

Cutters—

Meat.
Dixon's ₩ doz.....40&5%
Nos..... 1 2 3 4
$14.00 $17.00 $19.00 $30.00
Woodruff's ₩ doz.....40&5%
Nos..... 100 150
$15.00 $18.00
Hales Pattern ₩ doz.....70@70&5%
Nos..... 11 12 13
$27.00 $33.00 $45.00
American.....30%
Nos..... 1 2 3 4 B 5
Each.....$5 $7 $10 $25 $50 $60
Enterprise.....30%
Nos.....10 12 22 32 42
Each.....$3 $2.50 $4 $6 $15
Pennsylvania.....40&10%
Nos..... 1 2 3 00
₩ doz....$24.00 $28.00 $30.00 $38.00
Miles' Challenge ₩ doz.....45@45&10%
Nos..... 1 2 3
$22.00 $30.00 $40.00
Home No. 1.....₩ doz, $26.00, 55&10%
Draw Cut, each:
Nos..5 2 6 8
$50 $75 $80 $225 .....20@25%
Beef Shavers (Enterprise).....20&10@30%
Little Giant.....50%
Chadborn's Smoked Beef Cutter, ₩ doz $60.00

Tobacco.
Champion.....20&10@30%
Wood Bottom.....₩ doz $5.00@$5.25
All Iron.....₩ doz $4.25
Nashua Lock Co.'s..₩ doz, $18.00 50@55%
Wilson's.....55%
Sargents's.....₩ doz, $24, 55&10%
Acme.....₩ doz $20.00, 40%

Washer.
Smith's Pat.....₩ doz $12.00, 20&10&10%
Johnson's.....₩ doz $11.00, 33⅓%
Penny's. ₩ doz Pol. $14; Jap'd, $16.00, 55%
Appleton's.....₩ doz $16.00, 60&10%
Bonney's.....30&10%
Cincinnati.....25&10%

Cutlery—

Beaver Falls & Booth's.....33⅓
Wostenholme.....$7.75 to $

Dampers, &c—

Dampers, Buffalo.....40&10%
Buffalo Damper Clips.....40&10%
Crown Damper.....40%
Excelsior.....40&10%

Diggers, Post Hole, &c —

Samson Post Hole Digger, ₩ doz $36.00, 25&10%
Fletcher Post Hole Augers, ₩ doz $36, 20%
Eureka Diggers.....₩ doz $16.00@17.00
Leed's.....₩ doz $8.00@9.00
Vaughan's Post Hole Auger, ₩ doz $13.00@14.00
Kohler's Little Giant.....₩ doz. $18.00
Kohler's Hercules.....₩ doz. 15.00
Kohler' New Champion.....₩ doz. $9.00
Schniedler.....₩ doz. $18.00
Ryan's Post Hole Diggers..₩ doz $24.00
Cronk's Post Bars, ₩ doz $60.00, 50&5&50&10%
Gibbs Post Hole Digger, ₩ doz $30.00, 50%
Imperial, ₩ doz $15.....45%

Dividers—

See Compasses.

Dog Collars—See Collars, Dog, &c.

Door Springs—See Springs, Door.

Drawers.

Money, ₩ doz.....$18&$20

Drawing Knives — See Knives, Drawing.

Drills and Drill Stocks—

Blacksmiths'.....each $1.75
Blacksmiths' Self-Feeding, each $7.50,20%
Breast, P. S. & W.....40&10%
Breast, Wilson's.....30&5%
Breast, Millers Falls.....each $3.00, 25%
Breast, Bartholomew's....each $2.50, 25&10&40%
Ratchet, Merrill's.....20@20&5%
Ratchet, Ingersoll's.....25%
Ratchet, Parker's.....20@20&5
Ratchet, Whitney's.....20&10%
Retchet, Weston's.....20@25%
Ratchet, Moore's Triple Action..25@30%
Ratchet, Curtis & Curtis.....30%
Whitney's Hand Drill, Plain, $11.00; Adjustable, $12.00.....20&10%
Wilson's Drill Stocks.....10%
Automatic Boring Tools.....$1.75@$1.85

Twist Drills—
Morse.....50&10&5%
Standard.....50&10&5%
Syracuse (Metal list).....50&10%
Cleveland.....50&10&5%
Williams.....50&10&10%
New Proess.....50&10&5%

Drill Bits.—See Augers and Bits.

Drill Chucks.—See Chucks.

Dripping Pans-See Pans, Dripping.

Drivers, Screw.

Douglas Mfg. Co.....20@10&10%
Disston's.....45&10%
Disston's Pat. Excelsior.....45&10%
Buck Bros.....30%
Stanley R. & L. Co.'s
Varnished Handles.....65&10%
Black Handles.....60&10%
Sargent & Co.'s
No. 1 Forged Blade.....60&10&10%
Nos. 20, 30 and 60. .....60%&10&10%
P. S. & W.....70 %
Knapp & Cowles No.1.....60&20&70%
No. 1 Extra.....60@60&10
Nos. 00 & 4.....50&5@50&10&5%
Stearns'.....25&10&5%
Gay & Parsons.....35%
Champion.....25&10%
Clark's Pat.....30@33⅓%
Crawford's Adjustable.....30%
Ellrich's Socket and Ratchet..25@25&.0%
Allard's Spiral, new list.....25%
Kolb's Common Sense ₩ doz $6.00,25&10%
Syracuse Screw-Driver Bits....30&30&5%
Screw-Driver Bits .....₩ doz. 50@75¢
Screw-Driver Bits, Parr's.....₩ gro $6.25
Fray's Hol. Hdle. Sets. No. 3. $12.00, 25@25&10%
P. D. & Co.'s all Steel.....50%
Cincinnati.....20&10%
Brace Screw Drivers.....25&10%
Buck Bros.' Screw-Driver Bits .... %

Egg Beaters.—See Beaters, Egg.

Egg Poachers.—See Poachers, Egg.

Electric Bell Sets.—See Bells, Electric.

Emery. — No. 4 to No. 54 to Flour, CF

	46 gr.	150 gr.	F. FF.
Kegs, ₩ lb.....	4½¢	5 ¢	2½¢
½ kegs, ₩ lb...4½¢		5½¢	2¾¢
¼ kegs, ₩ lb...5 ¢		5½¢	3 ¢
10-lb cans, 10 in case.....6 ¢		6½¢	5 ¢
10-lb cans, less than 10.....10 ¢		10 ¢	7½¢

Enameled and Tinned Ware—See Ware, Hollow.

Escutcheon Pins—See Pins, Escutcheon.

Escutcheons.

Door Lock....Same dis as Door Locks.
Brass Thread.....60@60&10%
Wood.....25%

Fasteners, Blind—

Mackrell's, ₩ doz. $1.00.....20@20&10%
Van Sand's Screw Pat., $15 ₩ gr..60&10%
Van Sand's Old Pat., $15.00 ₩ gr..55&10%
Washburn's Old Pattern, ₩ gr.....$9.00
Merriman's.....new list
Austin & Eddy No. 2008 ₩ gr.....$9.00
Security Gravity, ₩ gr.....$9.00

Faucets.—

Fenn's.....40%
Bohren's Pat. Rubber Ball.....25%
Fenn's Cork Stops.....33⅓%
Star.....60%
Frary's Pat. Petroleum.....40&5&2%
B. & L. B. Co.
West's Lock, Open and Shut Key...50%
Star, Metal Plug, new list.....40%
Lockport, Metal Plug, reduced list..60%
Metallic Key, Leather Lined....60&10@60&10&10%
Cork Lined.....70&5@70&10%
Burnside's Red Cedar.....50%
Burnside's Red Cedar, bbl lots....50&10%
John Sommers'
Peerless Best Block Tin Key... .....40%
IXL, 1st quality, Cork Lined.....50%
Diamond Lock.....40%
Perfection, Fla. Red Cedar.....50%
Goodenough Cedar.....50%
Boss Metallic Key.....50%
Reliable Cork Lined.....60%
Western Pattern Cork Lined.....50%
Self-Measuring
Enterprise, ₩ doz $50.00.....20&10%
Lane's, ₩ doz $36.00.....25&10%
Victor, ₩ doz $36.00.....25&10%

Felloe Plates—See Plates, Felloe.

Fifth Wheels.—

Derby and Cincinnati.....50&5%
Brewster.....55&5%

Files—

Domestic—
Nicholson Files, Rasps, &c.....60&10@60&10&5%
Nicholson (X. F.) Files.....25%
Nicholson's Royal Files (Seconds).....75% (extra prices on certain sizes)
Other makers, best brands.....60&20%
Fair brands.....60&10&10@70&5%
Second quality.....70&10@75&10%
Nicholson's Horse Rasps....60&10@60& 10&5%
Heller's Horse Rasps.....50&7½@50&10%
McCaffrey's Horse Rasps.....50&10%
Chelsea Horse Rasps, Hand Cut...50&10%

Imported—
Moss & Gamble....List, April 1, 1883, 15%
Butcher.....Butcher's list, 20%
Stubs.....Stubs list, 25@30%
Turton's.....Turton's list, 20@25%
Greaves' Horse Rasps..American list, 0%

Fixtures.

Grindstone—
Sargent's Patent.....70&10%
Reading Hardware Co.....30&10%
P., S. & W. Co.....50&10%

Fluting Machines—See Machines, Fluting.

Fluting Scissors — See Scissors, Fluting.

Fodder Squeezers—See Squeezers, Fodder.

Forks—

Hay, Manure, &c., Asso List.....70%
Hay, Manure, &c., Phila. List 60@60&5%
Plated, see Spoons.

Frames—

Saw—
White Vermont.....₩ gro $9.00@10.00
Red, Polished and Varnished.....₩ doz $1.50, 25%

Screen, Window and Door—
Porter's Pat. Window and Door Frame. 33⅓&10%
Warner's Screen Corner Irons..33⅓@ 33⅓&10%
Stearns' Frames and Corners..25@25&10%

Freezers, Ice Cream—

Buffalo Champion.....65&65&5%
Shepard's Lightning.....65@65&5%
White Mountain.....50&20&5%
New Arctic.....50&40&5%
American.....60%
Gem.....65%
Blizzard.....70%
Double Action Crown.....60%
Crown.....60%
Star.....60
Peerless and Giant.....60&10
Zero and Pet.....65&10
Boss.....65&10&10
Keystone, P. D. & Co., each, $1.50.....25%

Fruit and Jelly Presses—See Presses, Fruit and Jelly.

Fry Pans—See Pans, Fry.

Fuse— ₩ 1000 ft

Common Hemp Fuse, for dry ground.$2.70
Common Cotton Fuse, for dry ground 2.85
Single Taped Fuse, for wet ground.. 3.85
Double Taped Fuse, for very wet gr. 4.85
Triple Taped Fuse, for very wet gr.. 5.60
Small Gutta Percha Fuse, for water. 7.50
Large Gutta Percha Fuse, for water.12.00

Gates, Molasses—

Stebbin's Pattern.....75@75&10%
Stebbin's Genuine.....60&10&10%
Stebbin's Tinned Ends.....40&10%
Chase's Hard Metal.....50&10%
Bush's.....20%
Lincoln's Pattern.....70@70&10%
Weed's.....20&10%
Boss, ₩ doz:
No. 1, $7; No. 2, $8; No. 3, $9; No. 4, $10.....60&10&10%

Gauges.

Marking, Mortise, &c.....60&10%
Starrett's Surface, Center and Scratch. 25&10%
Wire, low list.....10&10%
Wire, Wheeler, Madden & Co.....10%
Wire, Morse's.....50@50&5%
Wire, Brown & Sharpe's.....10@20%
Wire, P. S. & W. Co.....

Gimlets—

Nail and Spike.....50&10&5%
"Eureka" Gimlets.....40&10%
"Diamond" Gimlets.....₩ gr $5.00
Double Cut, Shepardson's.....45@45&5%
Double Cut, Ives'.....60@60&5%
Double Cut, Douglass'.....40&10%
"Bee," ₩ gr $12.....25@25&5%

Glue—

Le Page's Liquid.....25@25&5%
Upton's Liquid.....35%
Le Page & Co.'s Improved Process 25@25&5%

Glue Pots—See Pots, Glue.

Grease, Axle.

Fraser's.....Keg ₩ lb 4¢, Pail ₩ lb 5¢
Fraser's, in boxes.....₩ gr $9.50
Dixon's Everlasting, in bxs...₩ doz 1lb $1.20; 2 lb $2.00
Dixon's Everlasting....10-lb pails, ea. 35¢
Lower grades, special brands, ₩ gr $5.50@$7.00

Grindstones—

Small, at factory.....₩ ton $7.50@9.00

Grindstone Fixtures—See Fixtures, Grindstone.

Hack Saws—See Saws.

Hafts, Awl.

Sewing, Brass Fer. ₩ gr, $3.50.....45&10%
Pat. Sewing, Short. $1.00 ₩ doz.....40&10%
Pat. Sewing, Long.....₩ doz $1.20
Pat. Peg, Plain Top. ₩ gr $10.00....45&10%
Pat. Peg, Leather Top. ₩ gr $12.00.45&10%

Halters.

Covert's, Rope, ½-in. Jute..... 50&2%
Covert's, Rope, ½-in. Hemp .....50&2%
Covert's Adj. Rope Halters .....40&2%
Covert's Hemp Horse and Cattle Tie, 50&2%
Covert's Jute Horse and Cattle Ties, 60&10&2%

Hammers—

Handled Hammers—
Maydole's, list Dec. 1, '85.. ....25&10@35%
Buffalo Hammer Co.... } List Jan. 15, '87
Humason & Beckley ... } 50@50&10%
Atha Tool Co.....
Fayette R. Plumb.....50@50&10%
C. Hammond & Son..List, Oct., 1889, 50@50&10 %
Hartford Hammer Co.....50@50&10 %
Verree.....5%
Magnetic Tack, Nos. 1, 2, 3, $1.25, 1.50 & 1.75.....30&10%
Nelson Tool Works.....40&10%
Warner & Nobles.....20@25
Peck, Stow & Wilcox 40%
Sargent's.....33⅓&10%

Heavy Hammers and Sledges—
3 lb and under.. .... ₩ lb40¢ } 70@70&10 %
3 to 5 lb.....₩ lb36¢ }
Over 5 lb.....₩ lb30¢ }
Wilkinson's Smiths.....10½¢@11¢₩ lb

Handcuffs and Leg Irons—See Police Goods,

Handles—

Cross-Cut Saw Handles—
Atkins' No. 1 Loop, ₩ pair, 28¢; No. 3 18¢; No. 6, 16¢; No. 2 and No. 4 Reversible, 18¢.
Boynton's Loop Saw Handles, 50¢....60%
Champion.....15

Iron, Wrought or Cast—
Door or Thumb.

Nos.....	0	1	2	3	4
Per doz....	$0.90	1.00	1.18	1.35	1.50

60&10&10%

Roggin's Latches.....₱ doz 30¢@35¢
Bronze Iron Drop Latches..₱ doz 70¢ net
Jap'd Store Door Handles—Nuts, $1.62; Plate, $1.10; no Plate, $0.88 ..... net
Barn Door, ₱ doz $1.40..... 10&10%
Chest and Lifting.....70%

Wood—

Saw and Plane.....40&10@40&10&5%
Hammer, Hatchet, Axe, Sledge, &c...40%
Brad Awl.....₱ gr $2.00
Hickory Firmer Chisel, ass'd..₱ gr 4.50
Hickory Firmer Chisel, large..₱ gr 5.00
Apple Firmer Chisel, ass'd...₱ gr 5.00
Apple Firmer Chisel, large...₱ gr 6.00
Socket Firmer Chisel, ass'd..₱ gr 3.00
Socket Framing Chisel, ass'd..₱ gr 5.00
} 40&10%
J. S. Smith & Co.'s Pat File.....50%
File, assorted..... ₱ gr 2 75
Auger, assorted.....₱ gr 5.00
Auger, large.....₱ gr 7.00
} 40@40&10%
Pat. Auger, Ives'.....30&10%
Pat. Auger, Douglass..... ₱ set $1.25
Pat. Auger, Swan's.....₱ set $1.00
Hoe, Rake, Shovel, &c. .....50@10 %

Hangers—

Barn Door, old patterns...60&10&10@70%
Barn Door, New England...60&10&10@70
Samson Steel Anti-Friction.....55%
Orleans Steel.....55%
Hamilton Wrought Wood Track.....55%
U. S. Wood Track.....65%
Champion.....60&10%
Rider and Wooster, Medina Mfg. Co.'s list.....70%
Climax Anti-Friction.....60%
Climax Anti-Friction for Wood Track55%
Zenith for Wood Track.....55%
Reed's Steel Arm.....50%
Challenge, Barn Door.....50%
Sterling's Imp'ved (Anti-Friction).65&10%
Victor, No. 1, $15.00; No. 2, $16.50; No. 3, $18.00..... 50&2%
Cheritree.....50&10%
Kidder's.....50&10&60%
The Boss.....60&10%
Best Anti-Friction.....60&10%
Duplex (Wood Track).....60&10&5%
Terry's Pat., ₱ doz pr. 4 in, $10.00; 5 in. $12.00.....50&10%
Terry's Steel Anti-Friction Leader 50&10%
Terry's Steel Anti-Friction Ideal..50&10%
Cronk's Patent, Steel Covered.....50@5%
Wood Track Iron Clad, ₱ ft. 10¢.....50 &15@60%
Carrier Steel Anti-Friction.....50@50&5%
Architect, ₱ set $6.00.....20%
Eclipse.....20&10%
Felix, ₱ set $4.50.....20%
Richards'.....30@30&10%
Lane's Standard.....50&5@50&10%
Lane's New Standard.....50@5½&5%
Ball Bearing Door Hanger..20&10@25&10%
Warner's Pat.....20@20&10%
Stearns' Anti-Friction.....20@20&10%
Stearns' Challenge.....25&10@25&10&10%
Faultless.....40@40&5%
American, ₱ set $6.00.....20&10%
Rider & Wooster, No. 1, 62½¢; No. 2, 75¢.....40%
Paragon, Nos. 1, 2 and 3.....40&10%
Cincinnati.....25&10%
Paragon, Nos. 5, 5½, 7 and 8.....20&10%
Crescent.....60@60&10%
Nickel Cast Iron.....50%
Nickel, Malleable Iron and Steel 40%
Scranton Anti-Friction Single Strap33⅓%
Wild West, 4 in. Wheel, $15.00; 5 in. Wheel, $21.00.....45%
Star.....40&10@40&10&5%
May.....50&5@50&10%
Barry, $6.00..... .. .40&10%

Harness Snaps—See Snaps.

Hatchets—

List Jan. 1, 1886.
Isaiah Blood.....35@40%
Hunt's Shingling, Lath and Claw...40&5%
Hunt's Broad.....40%
Buffalo Hammer Co.....40&10@50%
Hurd's.....40&10@50%
Fayette R. Plumb.....40&10@50%
Wm. Mann, Jr., & Co.....50@50&5%
Underhill Edge Tool Co....40&5@40&10%
Underhill's, Haines and Bright.... 33⅓%
C. Hammond & Son.....50@50&10%
Simmons'.....40&10@50%
Peck's.....40&10@40&10&5%
Kelly's.....50@50&5%
Sargent & Co.....50%
P., S. & W. Co.....50%
Ten Eyck Edge Tool Co.40&10@40&10&5%
Collins.....10%
Schulte, Lohoff & Co.....50@50&5%

Hay and Straw Knives—See Knives.

Hinges—

Blind Hinges—

Parker.....75&2%
Palmer.....50&5&10%
Seymour .....70&2%
Nicholson.....45&10%
Huffer 50
Clark's, Nos. 1, 3, 5, 40 and 50 75&10&5@80%
Clark's Mortise Gravity..... ...50%
Sargent's, Nos. 1, 3, 5, 11, 13 75&10@55&10&5%
Sargent's, No. 12.....77&10&10%
Reading's Gravity.....75&10@75&10&5%
Shepard's
Noiseless.....75&10%
Niagara.....80%
Buffalo.....80%
Clark's Genuine Pattern.....80%
O. S., Lull & Porter.....75&10%
Acme, Lull & Porter.....75%
Queen City Reversible. ...70&10&5@75%
Clark's Lull & Porter, Nos. 0, 1, 1½, 2, 2½, 3.....75&10&2½%
North's Automatic Blind Fixtures, No. 2, for Wood, $10.50; No. 3, for Brick, $13.50. .....25&2%

Gate Hinges—

Western.....₱ doz $4.40, 60%
N. E.....₱ doz $7.00, 55%
N. E. Reversible.....₱ doz $5.20, 55&10%
Clark's, Nos. 1, 2, 3.....60&10&5%
N. Y. State.....₱ doz $5.00, 55&10%
Automatic.....₱ doz $12.50, 50%
Common Sense.....₱ doz pair $4.50, 50%
Seymour's.....45&10%
Shepard's.....60&10&5%
Reed's Latch and Hinges. ₱ doz $12.00, 50%

Spring Hinges—

Geer's Spring and Blank Butts.....40%
Union Spring Hinge Co.'s list, March, 1886 ....20%

Acme.....30%
J. S.....25&10%
Empire and Crown.....20%
Hero and Monarch.....55%
American, Gem, and Star..... .....20%
Oxford.....20%
Barker's Double Acting.....20&10%
Union Mfg. Co.....25%
Bommer's.....30%
Suckman's.....15@20%
Chicago.....30%
Wiles'.....10%
Devore's.....40%
Rex.....40%
Royal.....60%
Reliable.....60%
Champion.....60%
Bardsley's Patent.....40%

Wrought Iron Hinges

Strap and T.....70&10%
Screw Hook and Strap.....
6 to 12 in., ₱ D..4 2-10¢
14 to 20 in., ₱ D..3 7-10¢
22 to 36 in., ₱ D..3 2-10¢
Heavy Welded Hook.....
6 to 12 in., ₱ D..4 2-10¢
14 to 20 in., ₱ D..3 7-10¢
22 to 36 in., ₱ D..3 2-10¢
Screw Hook and Eye.....
⅛ in., ₱ doz $1.50
⅝ in., ₱ doz $2.45
¾ in., ₱ doz $3.80
10%
Rolled Blind Hinges, Nos. 32 and 34 50&10%
Rolled Blind Hinges, Nos. 232 and 234 55&10%
Rolled Plate.....70&10%
Rolled Raised.....70&10%
Plate Hinges "Providence".....
8, 10 & 12 in., ₱ D.....5¢
over 12 in., ₱ D. ...4¢

Hoes—

Eye—

D. & H. Scovil.....20%
Lane's Crescent Planters Pattern..45&5%
Lane's Razor Blade, Scovil Pattern...30%
Maynard, S. & O. Pat.....45&5%
Sandusky Tool Co., S. & O. Pat. 60&5@60&10%
Hubbard & Co., S. & O. Pat.60&5@60&10%
Chattanooga Tool Co., S. & O. Pat..60& 5@60&10%
Grub..... ... . 60@60&10%

Handled—

Garden, Mortar, &c.....70%
Planter's, Cotton, &c.....70%
Warren Hoe.....60%
Magic.....₱ doz $4.00

Hog Rings and Ringers—See Rings and Ringers.

Hoisting Apparatus—See Machines, Hoisting.

Hollow-Ware—See Ware, Hollow.

Holders.

Bag.

Sprengie's Pat.....₱ doz $18.....60%

Bit.

Extension, Barber's, ₱ doz $15.00.....40@40&10%
Ives, ₱ doz $20.00.....60&5@60&10%
Diagonal.....₱ doz $24.00, 40%
Angular.....₱ doz $24.00, 40&5%

File and Tool—

Balz Pat.....₱ doz $4.00; 25%
Nicholson File Holders..... 20%

Hooks—

Cast Iron—

Bird Cage, Sargent's list.....
Bird Cage, Reading.....
Clothes Line, Sargent's list..
Clothes Line, Reading list. 60&10@60&10&10%

Ceiling, Sargent's list.....55&10&10%
Harness, Reading list...55&10@55&10&10%
Coat and Hat, Sargent's list. 55&10@60&10%
Coat and Hat, Reading.50&10@50&10&10%

Wrought Iron—

Cotton.....₱ doz $1.25
Cotton Pat. (N.Y. Mallet & Handle W'ks). 30%
Tassel and Picture (T. & S. Mfg. Co.)..50%
Wrought Staples, Hooks, &c. See Wrought Goods.

Wire—

Wire Coat and Hat, Gem, list April, 1886.....50%
Wire Coat and Hat, Miles', list April, 1886.....50%
Indestructible Coat and Hat.....45%
Wire Coat and Hat, Standard.....45%
Handy Hat and Coat.....50&10%
Steady Ceiling Hooks.....50&10%
Belt.....80@80&10%

Miscellaneous.

Grass, No. 2, $2.00; No. 3, $2.25; No. 4, $2.50
Nolin's Grass.....₱ doz $2.25
Bush.....55@60%
Whiffletree—Patent.....55%
Hooks and Eyes—Malleable Iron. 70@70&10%
Hooks and Eyes—Brass.....60&10&10%
Fish Hooks, American..... 50%
Bench Hooks .....See Bench Stops.

Horse Nails—See Nails, Horse.

Horse Shoes—See Shoes, Horse.

Hose, Rubber—

Competition..... ...75&10@75&10&5%
Standard.....70@70&10%
Extra.....60@60&10%
N. Y. B. & P. Co., Para.....30&10%
N. Y. B. & P. Co., Extra.....50%
N. Y. B. & P. Co., Dundee.....60&10&5%

Huskers—

Blair's Adjustable.....₱ gr $8.00
Blair's Adjustable Clipper... ..₱ gr 7.00
Hubbard's Solid Steel.....₱ gr 4.50

Indurated Fiber-Ware—See Ware, Indurated Fiber.—

Irons.

Sad—

From 4 to 10, at factory ...₱ 100 ℔, $2.60@$2.75
Self-Heating.....₱ doz $9.00 net
Self-Heating, Tailors'....₱ doz $18.00 net
Gleason's Shield and Toilet.. .....25%
Mrs. Pott's Irons.....40@40&10%
Enterprise Star Irons..... ..40@40&10%
Cold Handle Sad Irons.....40&10@50%
Combined Fluter and Sad Iron, ₱ doz, $15.00.....15%
Fox Reversible, Self-Fluter ₱ doz $24.00
Chinese Laundry (N.E. Butt Co.) 8½¢, 15%
New England.....5¢, 15%
Mahony's Troy Pol. Irons.....25%
Sensible.....20@20&5%
National Self-Heating.....30%

Soldering—

Soldering Coppers.....₱ ℔ 22 @ 23¢
Covert's Adjustable, list Jan. 1, 1886. 35&2%

Irons, Pinking, per doz., 65¢.

Jack Screws—See Screws.

Jacks, Wagon.

Daisy..... .....25%

Kettles—

	Spun.	Stamped.
Brass, 7 to 17 in., ₱ ℔.....	24¢	21 ¢
Brass larger than 17 in., ₱ ℔.....	26¢	23½¢

Enameled and Tea—See Hollow-Ware.

Keys—

Lock Asso'n list Dec. 30, 1886...50&10@ 60&5%
Eagle, Cabinet, &c .....33½&2%
Hotchkiss' Brass Blanks.....40%
Hotchkiss, Copper and Tinned.....40%
Hotchkiss' Pad. and Cab.....35%
Ratchet Bed Keys.....₱ doz $4.00, 15%
Wollensak Tinned.....50&10%

Knife Sharpeners—See Sharpeners, Knife.

Knives.

Butcher, Shoe, &c—

Wilson's Butcher Knives.....25@30%
Ames' Butcher Knives.....25%
Foster Bros.' Butcher, &c.....40%
Nichols' Butcher Knives.....40&10%
Ames' Shoe Knives.....20@25%
Ames' Bread Knives. ₱ doz $1.50, 15@20%
Moran's Shoe and Bread.....30%
Hay and Straw.....See Hay Knives.
Table and Pocket.....See Cutlery.
Corn, Auburn Mfg. Co. Western Pat., $2.00
Corn, Auburn Mfg. Co. Crescent....$3.50

Corn—

Bradley's.....10%
Wadsworth's.....25%

Drawing—

Witherby, P. S. & W, Mix, New Haven.....75@75&10%
Merrill .....60&10@60&10&5%
Douglas.....75@75&5%
Watrous.....15&10@25%
L. & I. J. White.....20&5%
Bradley's.....35%
Adjustable Handle.....25@33⅓%
Wilkinson's Folding.....25@25&5%

Hay and Straw—

Lightning, Mfrs'. price ₱ doz $18.00, 25% But jobbers cut this price freely, often selling at $8 @ $8.50.
Wadsworth's.....40&7½@40&10%
Carter's Needle.....₱ doz $11.00@$11.50
Heath's.....₱ doz $13.00@13.50
Auburn Hay, Com. and Spear Point..50%
Auburn, Straw.....40%
Nolin's Hay .....₱ doz. $8.00 @ $9.00

Mincing.

Am. (2d quality), ₱ gr., 1 blade blades, $12; 3 blades, $18.....net
Lothrop's.....20&10%
Smith's, ₱ doz, Single, $2.00; Double, $3 40@45%
Knapp & Cowles.....50&10@60%
Buffalo Adjustable.....₱ doz $3.00 25%
Buffalo Double Adj'table, ₱ doz $8 00 25%

Knobs—

Door Mineral.....60@65%
Door Por. Jap'd.....70@75%
Door Por. Nickel.....$2.00@2.25
Door Por. Plated, Nickel.....$2.00@2.25
Drawer, Porcelain.....60&10@60&10&10%
Hemacite Door Knobs.....40&10@50%
Yale & Towne Wood, list Dec., 1885...40%
Furniture Plain.....75¢ gro inch, 10%
Furniture, Wood Screws.....25&10%
Base, Rubber Tip.....70&10&5%
Picture, Judd's.....60&10&10@70%
Picture, Sargent's.....70&10%
Picture, Hemacite.....55&5%
Shutter, Porcelain.....65&10%
Carriage, Jap.....₱ gro 80¢, 60&10%
Bardsley's Wood Door, Shutter, &c..40%

Ladles.—

Melting, Sargent's.....55&10%
Melting, Reading.....35&10%
Melting, Monroe's Pat...₱ doz $4.00, 40%
Melting, P. S. & W.....35&10@40%
Melting, Warner's.....30%

Lanterns—

Tubular—

Plain with Guards, ₱ doz.....$4.00@4.25
Lift Wire, with Guards.....$4.50@4.75
Square Plain, with Guards....$4.00@4.25
Sq. Lift Wire, with Guards....$4.25@4.50
Without Guards, 25¢ ₱ doz less.

Miscellaneous.

Police, Small, $6.00; Medium, $7.25; Large, $9.75.....20@25%

Lawn Mowers—See Mowers, Lawn.

Leaders, Cattle.

Humason, Beckley & Co.'s.....70%
Sargent's.....60%&10%
Hotchkiss.....30%
Peck, Stow & W. Co..... ..60&10%

Lemon Squeezers—See Squeezers, Lemon.

Lifters, Transom.

Wollensak's:
Class 3 and 4, Bronzed Iron.....50%
Class 3 and 4, Bronze Metal.....25%
Class 3 and 4, Brass.....35%
Skylight Lifters.....35%
Crown, Eagle and Shield.....50%
Reiher's, list Aug. 1, 1889-
Bronzed Iron Rods.....50&10&10&2%
Brass, Real Bronze or Nickel Plate..30%
Excelsior.....50&10&2%
Shaw's.....50&10%
Payson's Universal.....40@40&10%

Lines—

Cotton and Linen Fish, Draper's 50%
Draper's Chalk.....60%
Draper's Masons' Linen, 84 ft., No. 1, $1.25; No. 2, $1.75; No. 3, $2.25; No. 4, $2.75; No. 5, $3.25.....25%
Cotton Chalk.....55%
Samson, Cotton, No. 4, $2; No. 4½, $2.25; 10%
Silver Lake, Braided, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50 ₱ gro.....25%
Mason's Linen, No. 3½, $1.50; No. 4, $2.00; No. 4½, $2.50.
Mason's Colored Cotton.....45%
Wire Clothes. Nos. 12 16 20
100 ft. $4 00 $3 50 $3.00
Ventilator Cord, Samson Braided, White or Drab Cotton..₱ doz $7.50, 20%

Locks, &c.—

Cabinet—

Eagle, Gaylord Parker and Corbin... List March, '84, Jan. 1, '85..33½&2%
Deitz, Nos. 36 to 39.....40%
Deitz, Nos. 51 to 63.....40&10%
Deitz, Nos. 86 to 96.....30%
Stoddard Lock Co.....30&33⅓%
"Champion" Night Latches.....40%
Barnes Mfg. Co.....40@40&10%
Eagle and Corbin Trunk.....25&2%
"Champion" Cab. and Combin...33⅓%
Yale.....net prices
Romer's.....25%

Door Locks, Latches, &c.

R. & E. Mfg. Co., list Mar. 20, 1889..... 60&10@60&10%
Mallory, Wheeler & Co., list July, '88..... Much lower net prices often made.
Sargent & Co., list Aug. 1, '88
Reading Hardware Co., list Feb. 2, '88.....
Brittan, Graham & Mathes, list Jan. 1890.....60&10&10%
Perkins' Burglar Proof.....60&25%
Plate.....33½&2%
F. Many's "Extension Cylinder" $10.50 ₱ doz.
Barnes Mfg. Co.....40@40&10%
Yale.....net prices
Delta Flat Key.....30%
L. & C. Round Key Latches.....30&10%
L. & C. Flat Key Latches.....33½&10%
Romer's Night Latches.....15%
Shepardson or U. S.....35%
Felter or American.....40&10%
Seed's N. Y. Hasp Lock.....25%

Padlocks—

List Dec. 23, '84.....75@75&10%
Brittan, Graham & Mathes..... 75&10%
Yale Lock Mfg. Co.'s.....net prices
Eagle.....25&2%
Eureka, Eagle Lock Co.....40&2%
Romer's, Nos. 0 to 91.....30%
Romer's Scandinavian, &c., Nos. 100 to 505..15%
A. E. Deitz.....40%
Champon Padlocks.....40%
Hotchkiss.....30%
Star.....45%
Horseshoe.....₱ doz, $9. 40@40&10%
Barnes Mfg. Co..... .....40@40&10%
Nock's.....30%
Brown's Pat.....25%
Scandinavian.....90@90&10%
E. T. Fraim's Keystone Scandavian: Nos. 119, 120, 130 and 140... . .90&10% Other Nos.....65%
Ames Sword Co. up to No. 150.....40%
Ames Sword Co. above No. 150.....50%

Sash, &c.

Clark's, No. 1, $10; No. 2, $8 ₱ gr.. .33⅓%
Ferguson's.....33⅓%
Morris and Triumph, list Aug. 16, 1886. 60&2%
Victor.....60&10&2%
Walker's.....10%
Attwell Mfg. Co.....25&33⅓%
Reading.....66⅔&10@66⅔&10&10%
Hammond's Window Springs.....40%
Common Sense, Jap'd, Cop'd and Br'zed.....₱ gr $4.00
Common Sense, Nickel Plated ₱ gr $10.00
Universal.....30%
Kempshall's Gravity.....60%
Kempshall's Model.....60@60&10%
Corbin's Daisy, list Feb. 15, 1886.....70%
Payson's Perfect.....60@60&10%
Hugunin's Sash Balances.....25&5&2%
Hugunin's New Sash Locks.....25&5&2%
Stoddard "Practical" 10%
Ives' Patent..... .....60@60&10%
Liesche's, Nos. 100 and 110, ₱ gr $8; 105, $10.00. .....20&10%
Davis, Bronze, Barnes Mfg. Co..... 50%
Champion Safety, list March 1, 1888 55@5&5%
Security.....70%
Buckeye.....₱ gro $4.80

Lumber Tools—See Tools, Lumber.

Lustre—

Four-ounce Bottles....₱ doz, $1.75; ₱ gross..... .....$17.00

Machines.

Boring—

	Without Augers.	Upright.	Angular.	
Douglas.....	$5.50	$6.75		50%
Snell's, Rice's Pat.	5.50	6.75	40&10&10	
Jennings	5.50	6.75	45@45&10	
Other Machines...	2.35	2.75		net
Phillips' Patent with Augers ...	7.00	7.50		

Fluting.

Knox, 4½-inch Rolls .....$3.25 each } 35%
Knox, 6-inch Rolls..... .....$3.60 each }
Eagle, 3½-inch Roll, $2.15..... .....35%
Eagle, 5½-inch Roll, $2.85..... .....35%
Crown, 4½ in., $3.50; 6 in., $4.00; 8 in., $6.50 each 35%
Crown Jewel, 6 in ....$3.50 each, 35%
American, 5 in., $3.00; 6 in., $3.40; 7 in., $4.50 each..... .....35%
Domestic Fluter ....each, $1.50
Geneva Hand Fluter, White Metal ₱ doz $12, 25%
Crown Hand Fluter, Nos. 1, $15.00; 2, $12.50; 3, $10.00. ....30%
Shepard Hand Fluter, No. 85 ₱ doz $15.30 ....40%

Shepard Hand Fluter, No. 110 ₱ doz $11.00.....40%
Shepard Hand Fluter, No. 95 ₱ doz $8.00.....40%
Clark's Hand Fluter. ₱ doz $15.00.....35%
Combined Fluter and Sad Iron, ₱ doz $15.00.....30%
Buffalo ₱ doz $10.00.....10%

Hoisting—
Moore's Hand Hoist, with Lock Brake.....20%
Moore's Differential Pulley Block....40%
Energy Mfg. Co's.....25%

Mallets.

Hickory.....20&10@20&10&10%
Lignumvitæ.....20&10@20&10&10%
B. & L. Block Co., Hickory & L. V. 30@30&10%
Mattocks. Regular list.....60&5%

Measures—
Standard Fiberware, No. 1, peck, ₱ dozen, $4; ½-peck, $3.50.

Meat Cutters—See Cutters, Meat.

Mills.

Coffee—
Box and Side, List Jan. 1, 1888.....60&2%
American, Enterprise Mfg Co.20&10@30%
The Swift, Lane Bros.....20&10%

Mincing Knives — See Knives, Mincing.

Molasses Gates—See Gates, Molasses.

Money Drawers — See Drawers, Money.

Mowers, Lawn.

Leading makers.....60@60&10&5%
Other makers.....60&10&5@60&10&10%
Pennsylvania.....60%
Continental.....60%
New Model.....60&10&5
New Quaker City.....60&10&5%
Great American.....60&10&5%

Muzzles—
Safety.....₱ doz. $3.00, 25 %

Nails.

Cut and Wire. See Trade Report.
Wire Nails, Papered.
Association list, July 15, 1889...70&10%
Tack Mfrs.' list.....60&10&10%
Wire Nails, Standard Penny.
Card June 1, '89, base.....$2.80 @ $2.90

Horse—

Nos.	6	7	8	9	10
Ausable....	28¢	26¢	25¢	24¢	23¢.

25&10@25&10&10%
Clinton, Fin.....10½ @ 11¢, net
Essex ....28¢ 26¢ 25¢ 24¢ 23¢.
25&10@25&10&10%
Lyra .....25¢ 23¢ 22¢ 21¢ 20¢.
40&10&5@50%
Snowden 25¢ 23¢ 22¢ 21¢ 20¢.
40&10&5@50%
Putnam.....23¢21¢ 20¢ 19¢ 18¢.
1000 ℔ in year 15%
Vulcan.....23¢ 21¢ 20¢ 19¢ 18¢..12½&5%
Northwest'n.25¢ 23¢ 22¢ 21¢ 20¢.
25@25&5%
Globe.....23¢ 21¢ 20¢ 19¢ 18¢..20&2½%
Boston.....23¢ 21¢ 20¢ 19¢ 18¢..20&2½%
A. C..... ....25¢ 23¢ 22¢ 21¢ 20¢.
25&10@33½&5%
C. B.-K.....25¢ 23¢ 22¢ 21¢ 20¢.
25&10@33½&5%
Champlain .28¢ 6¢ 25¢ 24¢ 23¢.
95&10&10%
New Haven..28 26¢ 25¢ 24¢ 23¢.
25&10@25&10&10%
Saranac.....23¢ 21¢ 20¢ 19¢ 18¢...30&10%
Champion ...25¢ 23¢ 22¢ 21¢ 20¢.
10&10&10%
Capewell.....28¢ 26¢ 5¢ 24¢ 23¢.
35&5@35&10&5%
Star.....23¢ 21¢ 19¢ 18¢.
10&10&10&12½%
Anchor.....23¢ 21¢ 20¢ 19¢ 18¢.....35%
Western.....23¢ 21¢ 20¢ 19¢ 18¢...40&10%
Empire Bronzed.....14 ₱ ℔.

Picture—
Brass Head, Sargent's list.....50&10&10%
Brass Head, Combination list.....50&10%
Porcelain Head, Sargent's list.50&10&10%
Porcelain Head, Combination list..40&10%
Niles' Patent.....40%

Nail Pullers.—See Pullers, Nail.

Nail Sets.—See Sets, Nail.

Nut Crackers.—See Crackers, Nut.

Nuts—
Net, off list Dec. 18,1889: Square. Hex.
Pressed..... 4¾¢ 5¼¢
Cold Punched..... 5 ¢ 5½¢
In lots less than 100 ℔, ₱ ℔, add ¼¢; 1-℔ boxes, add 1¢ to list.

Oakum—
Government.....₱ ℔ 7¼@7¾¢
U. S. Navy.....₱ ℔ 6¼@6¾¢
Navy..... ₱ ℔ 5½¢@5¾¢

Oilers—
Zinc and Tin.....65@65&10%
Brass and Copper.....50&10@50&10&5%
Malleable, Hammers' Improved, No. 1, $3.60; No. 2, $4.00; No. 3, $4.40 ₱ doz. 10@10&5%
Malleable, Hammers, Old Pattern, same list.....40%
Prior's Pat. or "Paragon" Zinc. 60&10&10%
Prior's Pat. or "Paragon" Brass.....50%
Olmstead's Tin and Zinc.....60%
Olmstead's Brass and Copper.....50%
Broughton's Zinc.....60%
Broughton's Brass.....50%
Gem P. D. & Co. .....₱ gro. $2
Steel, Draper and Williams.....50%

Openers, Can.
Messenger's Comet.....₱ doz $3.00, 25%
American.....₱ gross $3.00
Duplex.....doz 25¢, 15¢&20%
Lyman's.....₱ doz $3.75, 20%
No. 4 French.....₱ doz $2.25, 55&60%
No. 5, Iron Handle.....₱ gr $6.00, 45&50%
Eureka.....₱ doz $2.50, 10%
Sardine Scissors.....₱ doz $2.75@3.00.
Star.....₱ doz $2.71
Sprague, No. 1, $2.00 2, $2.25; 3, $2.50 50&10&10%
World's Best, ₱ gross, No. 1, $12.00 No. 2, $24.00; No. 3, $36.00.....50&10%
Universal, ₱ doz $3.00.....35&5%
Domestic, ₱ doz $2.50.....45%
Champion ₱ doz $2.00 .....

Packing, Steam—
Rubber—
Standard .....60&10@60&10&10%
Extra .....50&10@60%
N. Y. B. & P. Co., Standard ...50&10&5%
N. Y. B. & P. Co., Empire 70%
N. Y. B. & P. Co., Salamander.

Jenkins' Standard.....₱ ℔ 65¢, 30%
Miscellaneous—
American Packing.....10¢@11¢ ₱ ℔
Russia Packing .....14¢ ₱ ℔
Italian Packing .....13¢@14¢ ₱ ℔
Cotton Packing .....15¢@17¢ ₱ ℔
Jute.....7¢@8¢ ₱ ℔

Padlocks—See Locks.

Parers.

Apple.

Advance	₱ doz	$4.75
Antrim Combination	₱ doz	5.50
Baldwin	₱ doz	5.25
Champion	₱ doz	7.25
Daisy	₱ doz	4.00
Eureka, 1888	each	17.00
Family Bay State	₱ doz	12.00
Favorite	₱ doz	5.00
Gem	₱ doz	5.25
Gold Medal	₱ doz	4.00
Ideal	₱ doz	4.00
Improved Bay State	₱ doz	30.00
Little Star	₱ doz	4.50
Monarch	₱ doz	13.50
New Lightning	₱ doz	5.50
Oriole	₱ doz	4.00
Penn	₱ doz	4.00
Perfection	₱ doz	4.00
Pomona	₱ doz	4.00
Rocking Table	₱ doz	6 00
Turntable	₱ doz	4.50
Victor	₱ doz	13.50
Waverly	₱ doz	4.00
White Mountain	₱ doz	4.50
72	₱ doz	4.25
76	₱ doz	5.75
78	₱ doz	6.50

Potato—
White Mountain .....₱ doz $5.00@5.50
Antrim Combination.....₱ doz $8.00
Hoosier.....₱ doz $13.50

Pails.

Galvanized Iron—

Quarts	10	12	14
Hill's Light Weight, ₱ doz.	$2.75	3.00	3.25
Hill's Heavy Weight, ₱ dz.	3.00	3.25	3.75
Whiting's	2.75	3.00	3.25
Sidney Shephard & Co....	2.94	3.15	3.57
Iron Clad	2.50	2.75	3.00
Fire Buckets	2.75	3.25	3.50

Buckets, see Well Buckets.
Indurated Fibre Ware—25%
Star Pails, 12 qt .....₱ doz $6.00
Fire, Stable and Milk, 14 qt ..₱ doz $7.80
Standard Fibre Ware—

	Plain.	Decr'd
Water Pails, 12 qt., per doz.	$4.00	$4.50
Dairy Pails, 14 qt., per doz.	4.50	5.00
Fire Pails, No. 1, 12 qt. per doz	4.50	
Fire Pails, No. 2, 14 qt. per doz	5.00	
Sugar Pails	6.00	6.50
Horse Pails	5.00	
Buggy Pails	4.00	
Slop Jars (bal. trap)	8.00	9.00
Chamber Pails, 14-qt	6.50	7.50

Pans.

Dripping.
Small sizes. .....₱ ℔ 6¼¢
Large sizes.....₱ ℔ 5¾¢

Fry—
Standard List:

No.	0	1	2	3	4
₱ doz.	$3.00	$3.75	$4.25	$4.75	$5.25
No.	5	6	7	8	
₱ doz.	$6.00	$7.00	$8.00	$9.00	

Polished, regular goods.....70&10%
Acme Fry Pans .....60&10%

Paper and Cloth—
Sand and Emery—
List April 19, 1886.....50@50&10%
Sibley's Emery and Crocus Cloth.....30%

Pencils—
Faber's Carpenters'..... ..high list 50%
Faber's Round Gilt.....₱ gro $5.25
Dixon's Lead..... .....₱ gro $4.50
Dixon's Lumber.....₱ gro $6.75
Dixon's Carpenters' ....40&10%

Picks—
Railroad or Adze Eye, 5 to 6, $12.00; 6 to 7, $13.00.....60 @ 60&5%

Picture Nails.—See Nails, Picture.

Pinking Irons.—See Irons, Pinking.

Pins.

Box—
Humason, Beckley & Co.'s.....60&10%
Sargent & Co's....$17 and $18.....60&10%
Peck, Stow & W. Co. 50&10&50&10&5%
Curtain—
Silvered Glass.....net
White Enamel.....net
Escutcheon,
Iron, list Nov. 11, 1885..50&10@50&10&5%
Brass.....60@60&5%

Pipe, Wrought Iron—
List September 18, 1889.
1¼ and under, Plain 47½%
1¼ and under, Galvanized 40%
1¼ and over, Plain.....6%
1¼ and over, Galvanized 47½%
Boiler Tubes, Iron.
1¾ and under.....45%
2 to 4 inch.....50%
4-inch and larger.....52½%

Planes and Plane Irons—
Wood Planes—
Molding.....45&2%
Bench, First Quality.....55&2%
Bench, Second Quality.....60&2%
Bailey's (Stanley R. & L. Co.).....40&10%
Iron Planes—
Bailey's (Stanley R. & L. Co.).....40&10@40&10&10%
Miscellaneous Planes (Stanley R. & L. Co.) .....20&10@20&10&10%
Victor Planes (Stanley R. & L. Co.). .....20&10@20&10&10%
Steer's Iron Planes.....35@35&10%
Merrien Mal. Iron Co.'s.....40@40&10%
Davis's Iron Planes .....40@40&10%
Birmingham Plane Co.....50@50&10%
Gage Tool Co.'s Self-Setting.....20&10%
Chaplin's Iron Planes .....40@40&10%
Sargent's .....30&10@30&10&10%
Standard Tool Co..... .....50@50&5%
Plane Irons—
Butcher's.....$5.00@$5.25 to 2
Buck Bros 30%
Auburn "Thistle..... .....
Ohio..... } 35&2%
Landusky.....
S. & I. J. White.....25%

Plates.
Felloe .....₱ ℔ 6¢@6½¢

Pliers and Nippers—
Button's Patent..... .....30&10@40%
Hall's No. 2, 5 in., $13.50; No. 4, 7 in. $21.00 ₱ doz .....20&10@33½&5%
Humason & Beckley Mfg. Co..50@50&10%
Gas Pliers.....60%
Gas Pliers, Custar's Nickel Plated..60&5%
Eureka Pliers and Nippers 40%
Russell's Parallel 25%
P. S. & W. Cast Steel 50%
P. S. & W. Tinners' Cutting Nippers, add 5% dis 10%
Carew's Pat. Wire Cutters.....20%
Morrill's Parallel, ₱ doz, $12.00....30&5%
Cronk's 8 in., $15.00; 10 in. $21.00, 40@40&5%

Plumbs and Levels—
Regular List .....70&10@70&10&10%
Disston's.....45&10%
Pocket Levels.....70&10@70&10&10%
Davis Iron Levels.....30%
Davis' Inclinometers ....10&10%

Poachers.
Egg.
Buffalo Steam Egg Poachers, ₱ doz, No. 1, $6.00; No. 2, $9.00.....25%

Police Goods.
R. I. Tool Co., Handcuffs, $15.00₱ doz 10%
R. I. Tool Co., Leg Irons, $25.00 ₱ doz 10%
Tower's.....25%
Daley's Improved Handcuffs: 2 Hands, Polished, ₱ doz $48.00; Nickeled, $57.00: 3 Hands, Polished, ₱ doz $72.00: Nickeled, $84.00..... 25%
J. P. Lovell's Police Goods..... 25%

Polish, Metal.
Prestoline.....20&10%
Prestoline Paste 33⅓%
Gaston's Silver Compound.....33⅓%

Pokes, Animal—
Bishop's I. X. L.....₱ doz $6.00
Bishop's O. K..... .....₱ doz $5.25
Bishop's Pioneer.....₱ doz $3.75
Bishop's American..... .....₱ doz $2.75

Polish, Stove.
Joseph Dixon's.....₱ gro $6.00, 10%
Gem.....₱ gro $4.50, 10%
Gold Medal.....₱ gro $6.00, 25%
Mirror .....₱ pro $6.00, —%
Lustro .....₱ gro $4.75
Ruby.....₱ gro $3.75
Rising Sun, 5 gro lots .....₱ gro $5.50
Dixon's Plumbago..... ..₱ ℔ $5.00
Boynton's Noon Day, ₱ gro 13.00
Parlor Pride Stove Enamel..₱ gro $ cans
Yates' Liquid, 2 3 5 10 gal....8¢
₱ gal ...$0.90 .80 .70 .60
Yates Standard Paste Polish, 10-℔ cans, ₱ ℔ 15¢
Jet Black .....₱ gro $3.50
Japanese.....₱ gro $3.50
Fireside.....₱ gro $2.50
Diamond O. K. Enamel.....₱ gro $19.00
Bonnell's Liquid Stove Polish..₱ gro $9.00
Bonnell's Paste Stove Polish..₱ gro $6.00
Black Eagle Benzine Paste, 5 and 10 ℔ cans.....12½¢
Black Jack Water Paste, 5 and 10 ℔ cans.....12½¢
Nickel Plate Paste .....₱ gro $6.00

Poppers, Corn—
Round or Square, 1 qt..₱ gr $10.00@10.50
Round or Square, 1½ qt..₱ gr $15@15.50
Round or Square, 2 qt..₱ gr $18.50@19.00

Post Hole and Tree Augers and Diggers—See Diggers, Post Hole, &c.

Potato Parers—See Parers, Potato.

Pots.
Glue—
Tinned.....40%
Enameled.....40&5%
Family, Howe's "Eureka".....40%
Family, L. F. C.'s "Handy".....50%

Presses.
Fruit and Jelly—
Enterprise Mfg. Co.....20&10@30%
Henis.....₱ doz $2.50
Shepard's Queen City 40%

Pruning Hooks and Shears.—See Shears.

Pullers.
Nail.
Curtiss Hammer..... .....₱ doz $9.00
Giant, No. 1.....₱ doz. $18.00, 10%
Giant, No 2.....₱ doz, $15.00, 10%
Pelican..... .....₱ doz, $9.00, 25%

Pulleys—
Hot House, Awning, &c.....60&10%
Japanned Screw... ....60&10%
Brass Screw.....60&10%
Japanned Side.....60&5&10%
Japanned Clothes Line.....60&10%
Empire Sash Pulley..... ..55@60%
Moore's Sash, Anti-Friction.....50%
Hay Fork, Solid Eye, $4.00; Swivel, $4.50.....50&10&50&10&5%
Hay Fork, "Anti-Friction," 5 in. Solid, $5.70 .....50%
Hay Fork, "F" Common and Pat. Bushed 20%
Hay Fork, Tarbox Pat. Iron.....20%
Hay Fork, Reed's Self-Lubricating ...60%
Shade Rack 45%
Tackle Blocks.....See Blocks
Moore's Anti-Friction 5 in. Wheel, ₱ doz $12.00..... 40

Pumps—
Cistern, Best Makers .....60@60&10%
Pitcher Spout, Best Makers.....67½@70%
Pitcher Spout, Cheaper Goods.70@70&5%

Punches—
Saddlers' or Drive, good, ₱ doz...60@65¢
Bemis & Call Co.'s Cast Steel Drive..50&5%
Bemis&Call Co's Springfield Socket.50&5%
Spring, good quality....₱ doz $2.50@2.60
Spring, Leach's Pat.....15%
Bemis & Call Co.'s Spring and Check ..40%
Solid Tinners', P.S.&W.Co.,₱ doz$1.44, 55%
Tin'rs' Hollow Punches P.S.&W.Co.20&2%
Rice Hand Punches 15%
Avery's Revolving.....40%
Avery's Saw-Set and Punch. See Saw Sets.

Rail—
Sliding Door, Wr't Brass, ₱ ℔ 35¢.....15%
Sliding Door, Bronzed Wr't Iron..₱ ft. 7¢
Sliding Door, Iron, Painted, ₱ foot 4¢, 40%
Barn Door, Light. In. ½ ¾ 1
Per 100 feet.....$2.00 2.50 3.10, 10%
B. D. for N. E. Hangers—
Small. Med. Large.
Per 100 feet....$2.15 2.70 3.25..net
Terry's Steel Rail, ₱ foot .....4½¢
Victor Track Rail, 7¢ ₱ foot.....50&2%
Carrier Steel Rail, ₱ foot .....4½¢
Moore's Wrought Iron.....25%

Rakes—
Cast Steel, Association goods 70%
Cast Steel, outside goods 60&10&10@70&5%
Malleable.....70@70&5%
Gibbs Lawn Rake.....$12.00, 50&1
Canton Lawn Rake.....$9.00, 50&10
Ft. Madison Prize Bow Brace and Peerless 65%
Fort Madison Steel Tooth Lawn Rake, $6.00..... .....25%

Razor
J. R. Torrey Razor Co 20%
Wostenholme and Butcher, $10.00 to £, 10%
Jordan's AA A1, list Nov. 1, 1889.....50%
Jordan's Old Faithful, list Nov. 1, '89.50%
Electric.....List net

Razor Strops—See Strops, Razor.

Rings and Ringers.
Bull Rings—
Union Nut Co.....55%
Sargent's.....60%&10@70&5%
Hotchkiss' low list.....30%
Humason, Beckley & Co.'s.....70&10%
Peck, Stow & W. Co's..50&10@50&10&10%
Ellrich Hdw. Co., White Metal, low list. 50@50&10%
Hog—
Top of the Hill Ringers.....₱ doz $2.00
Top of the Hill Rings.....₱ doz $1.25
Hill's Improved Ringers. ...₱ doz $4.25
Hill's Old Style Ringers.....₱ doz $2.75
Hill's Tongs. .....₱ doz bxs $4.50
Hill's Rings.....₱ doz bxs $2.15@2.25
Perfect Rings.....₱ doz bxs $1.60@1.70
Perfect Ringers.....₱ doz $2.15@2.25
Blair's Hog Ringers.....₱ doz $2.25@2.50
Blair's Hog Rings.....₱ doz 90¢@$1.00
Champion Ringers..... ...₱ doz $2.00
Champion Rings, Double.....₱ doz $2.25
Brown's Ringers..... .....₱ doz $2.00
Brown's Rings.....₱ doz $1.25@1.30

Rivets and Burrs—
Iron, list Nov. 17, '87.....40%
Copper.....50@50&10%

Rivet Sets—See Sets.

Rods—
Stair, Brass .....25&2%
Stair, Black Walnut .. ..₱ doz 40¢

Rollers—
Barn Door, Sargent's list .....60&10&10%
Acme Moore's Anti-Friction.....55%
Union Barn Door Roller 70%

Rope—
Manufacturers' prices:
Manila...½ in. and larger ₱ ℔ 15 ¢
Manila .....⅜ in. ₱ ℔ 15½¢
Manila .....¼ and 5-16 in. ₱ ℔ 15¼¢
Manila Tarred Rope.....₱ ℔ 14½¢
Manila, Hay Rope.....₱ ℔ 15 ¢
Sisal...½ inch and larger ₱ ℔ 12 ¢
Sisal .....⅜ in. ₱ ℔ 12½¢
Sisal.....¼ and 5-16 in. ₱ ℔ 12¾¢
Sisal, Hay Rope. ... .₱ ℔ 12 ¢
Sisal, Tarred Rope.....₱ ℔ 11½¢
Sisal, Medium Lathe Yarn. ₱ ℔ 11 ¢
Cotton Rope .....₱ ℔ 15@18¢ net
Jute Rope.....₱ ℔ 7½¢
} 1% for cash in 10 days.

Wire—
List May 1, 1886.
Iron.....30%
Iron, Galvanized.....27½%
Cast Steel.....35%

Rules—
Boxwood.....80&10&10@80&10&10&5%
Ivory.....50@50&10%
Starrett's Rules and Straight Edges, Steel..... .....25&10%

Sad Irons—See Irons, Sad.

Sand and Emery Paper and Cloth—See Paper and Cloth, Sand and Emery.

Sash Cord—See Cord, Sash.

Sash Locks—See Locks, Sash.

Sash Weights—See Weights, Sash.

Sausage Stuffers or Fillers—
See Stuffers or Fillers, Sausage.

Saws—
Disston's Circular.....45@45a5%
Disston's Cross Cuts..... ....45@45&5%
Disston's Hand 25@25&5%
} Extras some times given by jobbers.

Atkins' Circular Shingle and Heading 50
Atkins' Silver Steel Diamond X Cuts ₱ foot 70¢
Atkins' Special Steel Dexter X Cuts ₱ foot 50¢
Atkins' Special Steel Diamond X Cuts ₱ foot 30¢
Atkins' Champion and Electric Tooth X Cuts.....₱ foot 24@25¢
Atkins' Hollow Back X Cuts. .₱ foot 18¢
Atkins' Mulay, Mill and Drag.....40%
Atkins' One-Man Saw, with handles, ₱ foot 32¢
W. M. & C., Hand.....30&5@30&10%
W. M. & C., Champion X Cuts, Regular.....₱ foot 24@26¢
W. M. & C. X Cuts, Thin Back..... ₱ foot 27@29¢
Peace Circular and Mill.....45&10%
Peace Hand Panel and Rip 20&10@20&10&10%
Peace Cross Cuts, Standard...₱ foot 25¢
Peace Cross Cuts, Thin Back ₱ foot 27@28¢
Richardson's Circular and Mill 45@45&10%
Richardson's X Cuts, No. 1, 30¢; No. 2, 27¢; No. 3, 24¢

Hack Saws—
Griffin's, complete.....40&10@50%
Griffin's Hack Saw, Blades....40&10@50%
Star Hack Saws and Blades.....25%
Diamond Hack Saws and Blades.....25%
Eureka and Crescent.....25%

Scroll—
Lester, complete, $10.00.....25%
Rogers, complete, $4.00.....25%
Barnes' Builders' and Cabinet Makers', $15.....25%
Barnes' Scroll Saw Blades.....35%

Saw Frames—See Frames, Saw.

Saw Sets—See Sets, Saw.

Saw Tools—See Tools, Saw.

Sets.

Awl and Tool.
Aiken's Sets, Awls and Tools, No. 20, ₱ doz $10.00.....55&10%
Fray's Adj. Tool Hdls., Nos. 1, $12; 2, $18; 3, $12; 4, $9.....25@25&10%
Miller's Falls Adj. Tool Hdls.. Nos. 1, $12. 2, $18.....25%
Henry's Combination Haft...₱ doz $6.50
Brad Sets, No. 42, $10.50; No. 43, $12.50..70&10&5%
Stanley's Excelsior: No. 1, $7.50; No. 2, $4.00; No. 3, $5.50.....30&10%

Nail—
Square.....₱ gr., $4.00@$4.25
Round.....₱ gr. $3.25
Buck Bros.....27½%
Cannon's Diamond Point...₱ gr.,$12, 20%

Rivet.
Regular list.....50&10%

Saw—
Stillman's Genuine...₱ doz $5.00@7.75, 40&5%
Stillman's Imita.....₱doz $3.25@5.25, 40&5@40&10%
Common Lever.....₱ doz $2.00, 40&5%
Morrill's No. 1, $15.00; Nos. 3&4, $24.00, 40&10@50%
Leach's. .No. 0, $8.00; No. 1, $15, 15@20%
Nash's.....20&10@20&10&10%
Hammer, Hotchkiss.....$5.50, 10%
Hammer, Bemis & Call Co.'s new Pat. 30&5%
Bemis & Call Co.'s Lever and Spring Hammer.....30&5%
Bemis & Call Co.'s Plate.....10%
Bemis & Call Co.'s Cross Cut.....12½%
Aiken's Genuine.....$13.00, 50&10%
Aiken's Imitation.....$7.00, 55&5%
Hart's Pat. Lever.....20%
Disston's Star, ₱ No. 15, $5.50; 20& 10@20&10@10%
Atkin's Lever.....₱ doz No. 1, $6.00
Atkin's Criterion.....₱ doz No. 1, $6.00
Croissant (Keller), No. 1, $15.00; No. 2, $24.00.....40&10%
Avery's Saw Set and Punch.....50%
Chieftain H. R. Co.'s Superior..... ₱ doz $15, 50%

Scales—

Hatch, Counter, No. 171, good quality, ₱ doz $21.00
Hatch, Tea, No. 161....₱ doz $6.75@$7.00
Union Platform, Plain.....$2.10@2.20
Union Platform, Striped.....$2.20@2.30
Chatillon's Grocers' Trip Scales 50%
Chatillon's Eureka.....25%
Chatillon's Favorite.....40%
Family, Turnbulls.....30@30&10%
Riehle Bros.' Platform.....40%

Scale Beams—See Beams, Scale.

Scissors, Fluting.....45%

Scrapers—

Adjustable Box Scraper (S. R. & L. Co.) $6.50.....30&10%
Box, 1 Handle.....₱ doz $4.00. 10%
Box, 2 Handle.....₱ doz $6.00, 10%
Defiance Box and Ship.....20&10%
Foot.....50&10@60%
Ship, Common .....₱ doz $3.50 net
Ship, R. I. Tool Co.....10%

Screen Window and Door Frames—See Frames.

Screw Drivers—See Drivers, Screw.

Screws.

Bench and Hand—
Bench, Iron.....55&10@55&10&10%
Bench, Wood, Beech.....₱ doz $2.25
Bench, Wood, Hickory.....20&10%
Hand, Wood .....25&10@25&10&5%
Lag, Blunt Point, list Jan. 1, 1890..75&10%
Coach and Lag, Gimlet Point, list Jan. 1, 1890.....75%
Bed .....25&5%
Hand Rail, Sargent's.....60%&10%
Hand Rail, H. & B. Mfg. Co...70&10@75%
Hand Rail, Am. Screw Co.....75%
Jack Screws, Millers Falls list..50@50&5%
Jack Screws, P. S. & W.....35%
Jack Screws, Sargent...60&10@60&10&5%
Jack Screws Stearns'.....40@40&10%

Cork—
Humason & Beckley Mfg. Co..40&10@50%
Williamson's..... 33⅓@33⅓&5%
Hows Bros & Hulbert.....35%

Machine—
Flat Head, Iron.....55%
Round Head, Iron 50%

Wood—
List March 1, 1889.
Flat Head Iron.....50%
Round Head Iron.....40%
Flat Head Brass.....45%
Round Head Brass.....35%
Flat Head Bronze.....45%
Round Head Bronze ..35%
} Extra 5 @ 10 % often given.

Scroll Saws—See Saws, Scroll.

Scythe Snaths—See Snaths, Scythe.

Sharpeners, Knife.

Parkin s.
Applewood Handles...₱ doz $6.00, 40%
Rosewood or Cocobolo.₱ doz $9.00, 40%

Shaves, Spoke.

Iron.....45%
Wood.....30%
Bailey's (Stanley R. & L. Co.).....40&10%
Stearns'.....20&10@30%
Cincinnati.....25&10%

Shears—

American (Cast) Iron...75&10@75&10&5%
Pruning...See Pruing Hooks and Shears.
Barnard's Lamp Trimmers...₱ doz $3.75
Tinners'.....20&2%
Seymour's, List, Dec., 1881. 60&10&10@60&10&10&5%
Heinisch's, List, Dec., 1881. 60&10&10@60&10&10&5%
Heinisch's Tailor's Shears.....33⅓%
First quality C. S. Trimmers..80@80&10%
Second quality C. S. Trimmers. 80&10@80&10&10%
Acme Cast Shears.....10&10%
Diamond Cast Shears.....10%
Clipper.....10&10%
Victor Cast Shears.....75&10@75&10&5%
Howe Bros. & Hulbert, Solid Forged Steel.....40%
Chicago Drop Forge & F. Co., Solid Steel Forged.....60%
Clauss Shear Co., Japanned.....70%
Clauss Shear Co., Nickeled, same list.60%
Electric.....List net

Pruning Shears and Hooks.
Disston's Combined Pruning Hook and Saw.....₱ doz $18.00, 20&10%
Disston's Pruning Hook, ₱ doz $12.00, 20&10%
E. S. Lee & Co.'s Pruning Tools.....40%
Pruning Shears, Henry's Pat, ₱ doz $3.75@4.00 net
Henry's Pruning Shears, ₱ doz $4.25@ 4.50 net
Wheeler, M. & C. Co.'s Combination, ₱ doz $12.00, 20%
Dunlap's Saw and Chisel, ₱ doz $8.50, 30%
J. Mallinson & Co., No. 1, $5.25; No. 2 7.25
P., S. & W. Co.....60%

Tinners', &c.—
Shears and Snips (P. S. & W.).....20@25%
Snips, J. Mallinson & Co.....33⅓%

Sheaves—

Sliding Door—
M. W. Co., list July, 1888..50&10@60&5%
R. & E., list Dec. 18, 1885.....55&20%
Corbin's list.....60&10&2%
Patent Roller.....60&10&2%
Patent Roller, Hatfield's.....75%
Russell's Anti-Friction, list Dec. 18, 1885.....60&2%
Moore's Anti-Friction.....50%

Sliding Shutter—
R. & E. list Dec. 18, 1885.....60&10&2%
Sargent's list.....60&10%
Reading list.....60&10&10%

Ship Tools—

L. & I. J. White.....20&5%

Shoes, Horse, Mule, &c.—

Horse—
Burden's, Perkins', Phœnix, at factory. $4.00

Mule—
Add $1 ₱ keg to above prices.

Ox, Wrought—
Ton lots.....₱ ℔ 9¢
1000 ℔ lots.....₱ ℔ 9½¢
500 ℔ lots.....₱ ℔ 10¢

Shot—

(Eastern prices 2¢ off, cash, 5 days.
Drop, ₱ bag, 25 ℔.....$1.19
Drop, ₱ bag, 5 ℔ 29
Buck and Chilled, ₱ 25-℔ bag 1.44
Buck and Chilled, ₱ 5-℔ bag ..... .34

Shovels and Spades—

Ames' Shovels, Spades, &c., list Nov. 1, 1885.....20%
NOTE.—Jobbers frequently give 5@7½% extra on above.
Griffith's Black Iron .....50&10%
Griffith's C. S.....60@60&10%
Griffith's Solid C. S. R. R. Goods.....20%
Old Colony (Sanford Fork & Tool Co).35%
St. Louis Shovel Co.....20@20@7½%
Hussey, Binns & Co.....15@25%
Hubbard & Co.....20@20@7½%
Lehigh Mfg. Co.....50&10%
Payne Pettebone & Son, list January, 1886.....30%
Remington's (Lowman's Pat.)₱ &10@40%
Rowland's, Black Iron.....50&10%
Rowland's Steel.....60&5@60&10%

Shovels and Tongs—

Iron Head.....60&10@60&10&5%
Brass Head.....60&10&10%

Sieves—

Mann's Tin Rim.....50&25%
Buffalo Metallic, S. S. & Co.....50&25%
Shaker (Barler's Pat.) Flour Sifters.... ₱ doz $2.00; ₱ gr $21.60
Electric.....₱ gr $21.00
A. & W. Sifters.....₱ doz 2.00
Hunter's.....₱ doz $2.00
Smith's Adjustable Sifters....₱ doz $2.00
Smith's Adjustable Milk Strainer. ₱ doz $2.00
Smith's Adjustable T. & C. Strainer. ₱ doz. $1.25

Sieves, Wooden Rim—

	Iron.	Plated.
Mesh 18, Nested, ₱ doz..	80¢	$1.00
Mesh 20, Nested, ₱ doz..	95¢	1.10
Mesh 24, Nested, ₱ doz..	$1.15	1.25

Skeins, Thimble—

Western list.....75&5@75&10%
Columbus Wrt. Steel, list Jan. 3, 1889... 45&10%
Coldbrookdale Iron Co.....60%
Utica P. S. T. Skeins.....60%
Utica Turned and Fitted.....35%

Slates—

School, by case.....50@50&10%

Snaps, Harness, &c.—

Anchor (T. & S. Mfg. Co.).....65%
Fitch's (Bristol).....50&10%
Hotchkiss.....10%
Andrews.....50%
Sargent's Patent Guarded.....70&10&10%
German, new list.....40&10%
Covert.....50&2%
Covert, New Patent.....50&5&2%
Covert, New R. E.....60&10&2%
Covered Spring.....60&10&10%

Snaths, Scythe.

List.....50&5&2@50&10&2%

Soldering Irons—See Irons, Soldering.

Spittoons, Cuspidors, &c.

Standard Fiberware—
Cuspidors, 8½-inch, ₱ doz., No. 5, $8; No. 5X $9.
Spittoons, Daisy, 8-inch, No. 1, $4; 10 and 11 inch, $6.

Spoke Shaves—See Shaves, Spoke.

Spoke Trimmers—See Trimmers, Spoke.

Spoons and Forks—

Tinned Iron—
Basting, Cen. Stamp. Co.'s list....70&10%
Solid Table and Tea, Cen. Stamp. Co.'s list.....70&10%
Buffalo S. S. & Co.....33⅓&2%

Silver-Plated—(4 mos. or 5% cash 30 days).
Meriden Brit. Co., Rogers....40, 15, 10&5%
C. Rogers & Bros.....40, 15, 10&5%
Rogers & Bro.....40, 15, 10&5%
Reed & Barton.....40&10%
Wm. Rogers Mfg. Co.....40, 15, 10, 5&5%
Simpson, Hall, Miller & Co..40, 15, 10&5%
Holmes & Edwards Silver Co..... 40, 15, 10, 5&5%
L. Boardman & Son.....60%

Miscellaneous.
Holmes & Edwards Silver Co.:
No. 67 Mexican Silver.....50&10&5%
No. 30 Silver Metal.....50&10&5%
No. 24 German Silver.....50&10&5%
No. 50 Nickel Silver.....50%
No. 49 Nickel Silver.....50&10
German Silver.....50@50&5
German Silver, Hall & Elton..50&5% cash
Nickel Silver.....50&5@50&10&5% cash
Britannia.....60%
Boardman's Nickel Silver....50&5% cash
Boardman's Britannia Spoons, case lots.....60&5% cash

Springs, Door.

Torrey's Rod, regular size....₱ doz $1.30
Gray's, ₱ gr., $20.00.....20%
Bee Rod ₱ gr., $20.00.....20%
Warner's No. 1, ₱ doz, $2.50; No. 2, $3.30.....40&10@50%
Gem (Coil), list April 19, 1886.....10%
Star (Coil), list April 19, 1886.....20%
Victor (Coil).....60@60&10%
Champion (Coil).....60&10@60&10&10%
Philadelphia, 5 in., $5.00; 8 in., $7.75.. %
Cowell's....No. 1, ₱ doz, $18.00; No. 2, $15.00.....50%
Rubber, complete, ₱ doz, $4.50....55&10%
Hercules.....50%
Shaw Door Check and Spring.25@30@35%
Elliptic, Concord, Platform and Half Scroll.....60@60&5%
Cliff's Bolster Springs.....25%

Squares—

Steel and Iron.....
Nickel-Plated.....
} ...80@80 &10%
Try Square and T Bevels...60&10@60&10 &10%
Disston's Try Square and T Bevels.45&10%
Winterbottom's Try and Miter....30&10%
Starrett's Micrometer Caliper Squares. 25%
Avery's Flush Bevel Squares.....40%
Avery's Bevel Protractor.....50%

Squeezers.

Fodder.—
Blair's.....₱ doz $2.00
Blair's "Climax".....₱ doz $1.25

Lemon—
Porcelain Lined, No. 1....₱ doz $6.00, 25&30%
Wood, No. 2.....₱ doz $3.00, 35%
Wood, Common.....₱ doz $1.70@1.75
Dunlap's Improved .....₱ doz $3.75, 20%
Sammis....No. 1, $5.00; No. 2, $9; 12, $18 ₱ doz.....25&10%
Jennings' Star.....₱ doz $2.50
The Boss.....₱ doz $2.50
Dean's..Nos. 1, ₱ doz $6.50; 2, $3.35; 3, $1.80
Little Giant.....50@50&5%
King.....40&5%
Hotchkiss Straight Flash...₱ doz $12.00

Standard Fiber Ware—See Ware, Standard Fiber.

Staples.

Blind—
Barbed, ½ in. and larger.....₱ ℔ 7@7½¢
Barbed, ⅜ in.....₱ ℔ 8@8½¢
Fence Staples, Galvanized, Fence Staples, Plain..... } Same price as B'rb Wire. See Trd. Rep.
Steelyards.....40&10@50%

Stocks and Dies—

Blacksmith's
Waterford Goods.....30&5@30&10%
Butterfield's Goods.....30&5@30&10%
Lightning Screw Plate.....25@30%
Reece's New Screw Plates....33⅓&5@40%
Reversible Ratchet.....30 %
Gardner.....25%

Stops, Bench.

Morrill's.....₱ doz $9, 50%
Hotchkiss's.....₱ doz $5, 10@10&10%
Weston's, No. 1, $10; No. 2, $9.25&10&5%
McGill's.....₱ doz $3.....10%
Cincinnati.....25&10%

Stone—

Hindostan No. 1, 3¢; Axe, 3½¢; Slips No. 1, 4½¢
Sand Stone.....₱ ℔ 2½¢
Washita Stone, Extra.....₱ ℔ 20@21¢
Washita Stone, No. 1.....₱ ℔ 15@16¢
Washita Stone, No. 2.....₱ ℔ 11@12¢
Washita Slips, No. 1, Extra..₱ ℔ 37@40¢
Washita Slips, No. 1.....₱ ℔ 25@26¢
Arkansas Stone, No. 1, 4 to 6 in₱ ℔ $1.50
Arkansas Stone, No. 1, 6 to 9 in₱ ℔ $1.85
Turkey Oil Stone, 4 to 8 in.....₱ ℔ 40¢
Turkey Slips.....₱ ℔ $1.00@1.50
Lake Superior, Chase.....₱ ℔ 16¢
Lake Superior Slips, Chase...₱ ℔ 31@32¢
Seneca Stone, Red Paper Brand....₱ ℔ 18@20¢
Seneca Stone, High Rounds..₱ ℔ 20@25¢
Seneca Stone, Small Whets..₱ gro $24.00

Stove Polish—See Polish, Stove.

Stretchers, Carpet.

Cast Steel, Polished.....₱ doz $2.2?
Cast Iron, Steel Points.....₱ doz 80¢
Socket.....₱ doz $1.75
Millard's.....25@25&10%

Strops, Razor—

Genuine Emerson.....60@60&5%
Imitation " ....₱ doz $2.00, 20&10&5%
Torrey's.....20%
Badger's Belt and Com.....₱ doz $2.00
Lamont Combination.....₱ doz $4.00
Jordan's Pat. Padded, list Nov. 1, '89..50%
Electric.....List net

Stuffers or Fillers, Sausage—

Miles' "Challenge," ₱ doz $20, 50@50&5%
Perry ....₱ doz, No. 1, $15.00: No. 0, $21.00.....50&5@50&10%
Draw Cut No. 4, each $30.00.....20%
Enterprise Mfg. Co.....20&10@30%
Silver's.....40&10%

Sweepers, Carpet.

Bissell No. 5.....₱ doz $17.00
Bissell No. 7 New Drop Pan.₱ doz $19.00
Bissell, Grand.....₱ doz $36.00
Grand Rapids.....₱ doz $24.00
Crown Jewel, No. 1, $18.00; No. 2, $19.00; No. 3, $20.00
Magic.....₱ doz $15.00
Jewel.....₱ doz $17.00
Improved Parlor Queen, Nickeled..₱ doz $27.00
Japanned.....₱ doz $24.00
Excelsior .....₱ doz $22.00
Garland .....₱ doz $18.00
Parlor Queen.....₱ doz $24.00
Housewife's Delight.....₱ doz $15.00
Queen.....₱ doz $16.00
Queen, with band.....₱ doz $18.00
King .....₱ doz $30.00
Weed, Improved.....₱ doz $18.00
Hub.....₱ doz $16.00
Cog-Wheel.....₱ doz $16.00
Conqueror .....₱ doz $22.00
Easy .....₱ doz $22.00
Monarch.....₱ doz $22.00
Goshen.....₱ doz $21.00
Advance.....₱ doz $18.00
Ladies' Friend, No. 1, ₱ doz, $15.00; No. 2.....₱ doz $16.00
American.....₱ doz $15.00
Grand Republic.....₱ doz $35.00

Tacks, Brads, &c.—

List Oct. 19, 1889, extra 10&2 % cash.
Carpet Tacks—
American Iron, Blued.....70%
American Iron, Tinned or Cop'd...70%
Steel, Plain or Bright.....70%
Steel Tinned or Coppered.....70%
Swedes Iron, Blued.....70%
Swedes Iron, Tinned or Cop'd 70%
American Iron Cut Tacks.....67½%
Swedes Iron Upholst'rs' Tacks, S.S..70%
Swedes Iron Upholst'rs' Tacks, Tinned, S.S.....70%
Swedes Iron Card and Upholsterers' Tacks, Lanc.....66⅔%
Swedes Iron Card and Upholsterers' Tacks, Tinned, Lanc.....66⅔%
Gimp and Lace Tacks Lanc., Swedes Iron.....66⅔%
Gimp and Lace Tacks, Lanc., Swedes Iron, Tinned.....66⅔%
Gimp and Lace Tacks, S. S.....70%
Gimp and Lace Tacks Tinned, S. S..70%
Swedes Iron Basket or Trimmers' Tacks, Lanc.....66⅔%
Miners' Tacks, S. S.....70%
Bill-Posters' or Railroad Tacks, Lanc., Swedes 66⅔%
Bill-Poster's' or Railroad Tacks, S.S..70%
Copper Tacks.....50%
Copper Finish. & Trunk Nails.....50%
Cigar Box Nails.....50%
Zinc Glaziers' Points.....50%
Picture-Frame Points.....50%
Looking-Glass Tacks.....50%
Brush Tacks.....50%
Tin-Capped Trunk Nails.....60%
Finishing Nails.....65%
Trunk & Clout Nails. Black & Tin'd.60%&5
Common and Patent Brads.....60%
Hungarian Nails.....62½%
Basket and Chair Nails.....62½%
Leathered Carpet Tacks.....40%

Miscellaneous—
Double-Pointed.....82½%
Wire Carpet Nails.....50&10%

Wire Brads & Nails, see Nails, Wire.
Steel-Wire Brads, R. & E. Mfg. Co.'s list.....50&10%

Tap Borers—See Borers, Tap.

Tapes, Measuring—

American.....33⅓@33⅓&5%
Spring.....40%
Chesterman's, Regular list.....25@30%

Thermometers—

Tin Case.....80@80&10%

Thimble Skeins—See Skeins.

Ties, Bale—Steel

Standard Wire, list.....50&10&5%

Tinners' Shears, &c.—See Shears, Tinners', &c.

Tinware—

Stamped, Japanned and Pieced, list Jan. 20 1887.....70&10@70&10&5%

Tire Benders, Upsetters, &c—See Benders and Upsetters, Tire.

Tools.

Coopers'—

Bradley's.....20%
Barton's.....20@20&5%
L. & I. J. White.....20&5%
Albertson Mfg. Co.....25%
Beatty's.....30%
Sandusky Tool Co.....30@30&5%
Shaves, Cincinnati Tool Co.....20%

Lumber.

Ring Peavies, "Blue Line"...₩ doz $20.00
Ring Peavies, Common.....₩ doz $18.00
Steel Socket Peavies.....₩ doz $21.00
Mall. Iron Socket Peavies....₩ doz $19.00
Cant Hooks, "Blue Line"..₩ doz $16.00
Cant Hooks, Common Finish..₩ doz $14.00
Cant Hooks, Mall. Socket Clasp, "Blue Line" Finish.....$16.00
Cant Hooks, Mall. Socket Clasp, Common Finish.....₩ doz $14.50
Cant Hooks, Clip Clasp, "Blue Line" Finish.....₩ doz $14.00
Cant Hooks, Clip Clasp, Common Finish.....₩ doz $12.00
Hand Spikes....₩ doz 6 ft., $15.00; 8 ft., $20.00
Pike Poles, Pike & Hook, ₩ doz., 12 ft., $11.50; 14 ft., $12.50; 16 ft., $14.50; 18 ft., $17.50; 20 ft., $21.50.
Pike Poles, Pike only, ₩ doz, 12 ft., $10.00; 14 ft., $11.00; 16 ft., $13.00; 18 ft., $16.00; 20 ft., $20.00.
Pike Poles, not ironed, ₩ doz, 12 ft. $6.00; 14 ft., $7.00; 16 ft., $9.00; 18 ft., $12.00; 20 ft., $16.00.
Setting Poles, ₩ doz, 12 ft., $14.00; 14 ft., $15.00; 16 ft., $17.00
Swamp Hooks.....₩ doz $13.00
Saw.
Atkins' Perfection.....₩ doz $12.00
Atkins' Excelsior.....₩ doz $6.00
Atkins' Giant.....₩ doz $4.00

Tobacco Cutters—See Cutters, Tobacco.

Transom Lifters—See Lifters, Transom.

Traps—

Game—

Newhouse.....40@40&5%
Oneida Pattern.....70&10%
Game, Blake's Patent.....40&10&5%

Mouse and Rat—

Mouse Wood, Choker, ₩ doz holes, 11@12¢
Mouse, Round Wire.....₩ doz $1.50, 10%
Mouse, Cage, Wire.....₩ doz $2.50, 10%
Mouse, Catch-'em-alive....₩ dz $2.50 15%
Mouse, Bonanza.....₩ gr $10.00
Mouse Delusion.....₩ gr $15.00
Rat, Decoy.....₩ gr $10.00, 10%
Ideal.....₩ gr $10.00
Cyclone.....₩ gr $5.25
Hotchkiss Metallic Mouse, 5-hole traps, ₩ doz, 90¢; in full cases, ₩ doz....75¢
Hotchkiss Imp. Rat Killer..₩ gro $18.50
Hotchkiss New Rat Killer...₩ gro $16.50

Trowels—

Lothrop's Brick and Plastering, 20&10&5@35%
Reed's Brick and Plastering.....15%
Disston's Br'k and Plastering, 25@25&10%
Peace's Plastering.....25%
Clement & Maynard's.....20%
Rose's Brick.....15@20%
Brade's Brick.....25%
Worrall's Brick and Plastering.....20%
Garden.....70%

Triers—

Butter and cheese.....25%

Trimmers, Spoke.

Bonney's.....₩ doz $10.00, 50%
Stearns'.....20&10%
Ives', No. 1, $15.00; No. 2, $12.00 ₩ doz. 55&10%
Douglas'.....₩ doz $9.00, 20%
Cincinnati.....25%

Trucks, Warehouse, &c.—

B. & L. Block Co.'s list, '82.....40%

Tubes, Boiler—

See Pipe.

Twine—

Flax Twine—	BC.	R.
No. 9, ¼ and ⅛ ℔ Balls	26¢	34¢
No. 12, ¼ and ⅛ ℔ Balls	25¢	33¢
No. 18, ¼ and ⅛ ℔ Balls	22¢	32¢
No. 24, ¼ and ⅛ ℔ Balls	22¢	32¢
No. 36, ¼ and ⅛ ℔ Balls	20¢	31¢
No. 264, Mattress, ¼ and ⅛ ℔ Balls	52@54¢	
Chalk Line, Cotton, ⅛ ℔ Balls	25¢	
Mason Line, Linen, ⅛ ℔ Balls	55¢	
2-Ply Hemp, ¼ and ⅛ ℔ Balls (Spring Twine)	15½¢	
3-Ply Hemp, 1 ℔ Balls	16¢@16½¢	
3-Ply Hemp, 1¼ ℔ Balls	15¢@15½¢	
Cotton Wrapping, 5 Balls to ℔	15¢@16¢	
2, 3, 4 and 5-Ply Jute, ⅛ ℔ Balls	10¢	
Wool	6½¢@6¾¢	
Paper	13¢@14¢	
Cotton Mops, 6, 9, 12 and 15 ℔ to doz.	18¢	

Vises—

Solid Box.....50&10@50&10&5%

Parallel—

Fisher & Norris Double Screw.....15&10%
Stephens'.....25@30%
Parker's.....50@25%
Wilson's.....55%
Howard's.....40%
Bonney's.....40&10%
Milliers Falls.....40@40&10%
Trenton.....40@5@40&10%
Merrill's.....15@20%
Sargent's.....60@10&10%
Backus and Union.....40%
Double Screw Leg.....15&10%
Prentiss.....20@25%
Simpson's Adjustable.....40%
Moore's.....20%

Saw Filers—

Bonney's, Nos. 2 & 3, $15.00.....40&10%
Stearn's.....33⅓&10@33⅓&10&10%
Stearn's Silent Saw Vises.....33⅓@35%
Sargent's.....66⅔&10%
Hopkins'.....₩ doz $17.50, 10%
Reading.....40&10%
Wentworth.....20&10%
Combination Hand Vises.....₩ gr $42.00
Cowell Hand Vises.....20%
Bauer's Pipe Vises.....10%
Cincinnati.....20&10%

Wagon Boxes—See Boxes, Wagon.

Washer Cutters—See Cutters Washer.

Wagon Jacks—See Jacks, Wagon.

Ware, Hollow, Enameled, &c.

Cast Iron, Hollow—

Stove Hollow-Ware—
Ground.....55&5@60&5%
Unground.....65&10@65&10&5%
White Enameled-Ware—
Maslin Kettles.....60&10&10%
Boilers and Saucepans.....40&5%
Tinned Boilers and Saucepans.....40&5%
Rustless Hollow-Ware.....50@50&5%
Gray Enameled-Ware—
Stove.....50%
Maslin Kettles.....60&10&10%
Boilers and Saucepans.....40&5%

Enameled—

Agate and Granite Ware, list Jan. 1, 1889.....33⅓&10%
Ironclad Enameled Ware...dis 33⅓&10%

Kettles—

Galvanized Tea-Kettles—

Inch....	6	7	8	9
Each....	55¢	60¢	65¢	75¢

Standard Fiber—

	Per Dozen. Plain.	Dec'r'd
Wash-Basins, 10½ in.	$2.00	$2.25
Wash-Basins, 12 in.	2.25	2.75
Keelers, 11¼ in.		4.00
Cuspidors		8.00
Spittoons, "Daisy," 8 in.	4.00	4.50
Peck Measure	4.00	
Half-peck Measure	3.50	

See also Pails.

Indurated Fiber—25%

Spittoons, No. 2, ₩ doz.....$9.00
Basins, Ringed, ₩ doz., No. 1, $4.80; No. 2, $4.20; No. 3.....$3.60
Washtubs, Nested, Nos. 0, 1, 2 and 3 (4 pieces), ₩ nest.....$7.50
Keelers, Nested, Nos. 1, 2, 3 and 4 (4 pieces), ₩ nest.....$9.70
Butter Bowls 15, 17 and 19-inch (3 pieces), ₩ nest.....$2.25
Liquid Measures, pt., qt., 2 qt. and funnell (4 pieces) ₩ set.....$4.00
Dry Measures, 1, 2, 4, 8 and 16 qts. (5 pieces), ₩ set.....$3 00
See also *Pails.*

Silver Plated, Hollow—

4 mo. or 5 % cash in 30 days.
Reed & Barton.....
Meriden Britannia Co.....
Simpson, Hall, Miller & Co.....
Rogers & Brother.....
Hartford Silver Plate Co.....
William Rogers Mfg. Co.....
} 40&5&5%

Washers—

Size.....	⅛	5-16	⅜	½	⅝	¾	1
Washers....	6¼	5¼	4½	3½	3	3	3

In lots less than 200 ℔, ₩ ℔, add ¼¢, 5-℔ boxes 1¢ to list.

Wedges—

Iron.....₩ ℔ 3½¢
Steel.....₩ ℔ 4 ¢

Weights, Sash—

Solid Eyes.....₩ ton $22.00

Well Buckets, Galvanized—See Buckets, Well, Galvanized.

Wheels, Well.

8 in., $2.25; 10 in., $2.70; 12 in., $3.25

Wire and Wire Goods—

Iron—

Market.
Br. & Ann., Nos. 0 to 18.....
Cop'd, Nos. 0 to 18.....
Galv., Nos. 0 to 18.....
Tin'd, Tinned list Nos. 0 to 18.
} See Trade Report
Stone,
Br. and Ann'd, Nos. 16 to 18....67½%
Bright and Ann'd, Nos. 19 to 26.67½&5%
Br. and Ann'd, Nos. 27 to 36....70&10%
Tinned.....67½%
Tinned Broom Wire.....67½@67½&5%
Galvanized Fence.....55%
Annealed Fence, Nos. 8 and 9.....65%
Annealed Grape, Nos. 10 to 14.....65%
Brass, list Jan. 18, 1884.....25%
Copper, list Jan. 18, 1884.....25%
Barb Fence.....See Trade Report
Wire on Spools.....65%
Malin's Steel and Tin'd Wire on Spools, 50%
Malin's Brass and Cop. Wire on Spools 40%
Cast Steel Wire.....50%
Stubs' Steel Wire.....$6.00 to 2, 30
Steel Music Wire, Nos. 12 to 30..55¢ ₩
Picture Wire.....New list 50%
Barb Wire Safety Guards, ₩ 1000, $9.00, 25%
Wire Clothes Lines, see Lines.

Bright Wire Goods—

Standard list.....85%

Wire Cloth and Netting.

Painted Screen Cloth, good quality, ₩ 100 sq. ft., $1.80 @ $1.90
Galvanized Wire Netting.....70@70&10%

Wire Rope—See Rope, Wire.

Wrenches—

American Adjustable.....40%
Baxter's Adjustable "S".....40&10@50%
Baxter's Diagonal.....40&10@50%
Coes' Genuine.....50&3%
Coes' "Mechanics'".....50&10&3%
Girard Standard.....65&10%
Lamson & Sessions' Engineers'..60&10%
Lamson & Sessions' Standard...70&10%
Goes' Pattern, Wrought.....
Girard Agricultural.....
Lamson & Sessions' Agric'l..
} 75@75&10
Bemis & Call's
Pat. Combination.....35%
Merrick's Pattern.....55%
Brigg's Pattern.....25%
Cylinder or Gas Pipe.....40&5%
No. 3 Pipe.....40&10%
Aiken's Pocket (Bright).....$6.00, 50&10%
The Favorite Pocket.....₩ doz $4.00, 40%
Webster's Pat. Combination.....25%
Boardman's.....20&10%
Always Ready.....25&5%
Alligator.....50%
Donohue's Engineer.....20&10%
Acme, Bright.....60&3%
Acme, Nickeled.....50&3%
Walker's.....55&3%
Diamond Steel.....55&3%
Cincinnati Brace Wrenches.....15&10%
Cincinnati Monkey Wrenches...15&10%
Tafts' Vise Wrench.....55&10&3%

Wringers, Clothes—

List March 11, 1889, 2% cash.

Wrought Goods—

Staples, Hooks, &c, list Jan. 12, 1888, 40&15@85%

PAINTS, OILS AND COLORS.—Wholesale Prices.

Animal and Vegetable Oils.

Linseed, City, raw..per gal.	62	@	64
Linseed, City, boiled.....	64	@	66
Linseed, Western, raw.....	—	@	60
Lard, City, Extra Winter..	53	@	54
Lard, City, Prime, present make.....	52	@	53
Lard, City, Extra No. 1.....	45	@	48
Lard, City, No. 1.....	42	@	44
Lard, Western, prime.....	52	@	—
Cotton-seed, Crude, prime.	27½	@	28
Cotton-seed, Crude, off grades.....	24	@	27
Cotton-seed, Summer Yellow, Prime.....	33½	@	34
Cotton Seed, Summer Yellow, off grades.....	31	@	33
Sperm, Crude.....	65	@	67
Sperm, Natural Spring.....	..	@	..
Sperm, Bleached Spring....	..	@	..
Sperm, Natural Winter.....	75	@	78
Sperm, Bleached Winter...	80	@	83
Whale, Crude.....	40	@	
Whale, Natural Winter.....	46	@	..
Whale, Bleached Winter....	48	@	..
Whale, Extra Bleached.....	51	@	..
Sea Elephant, Bleached Winter.....	58	@	60
Menhaden, Crude, Sound...	22	@	23
Menhaden, Crude, Southern	..	@	..
Menh den, Light Pressed..	27	@	28
Menhaden, Bleached W'ter.	32	@	35
Menhaden, Extra Bleached	35	@	36
Tallow, City, prime.....	..	@	46
Tallow, Western, prime....	..	@	..
Cocoanut, Ceylon.....	5¾	@	5¾
Cocoanut, Cochin.....	6	@	2⅛
Cod, Domestic	31	@	32
Cod, Foreign.....	33	@	34
Red Elaine.....	33	@	35
Red Saponified..... ₩ ℔	4½	@	4½
Bank.....per gal	25	@	..
Straits.....	27	@	..
Olive, Italian, bbls.....	92½	@	95
Neatsfoot, prime.....	62½	@	75
Palm, prime, Lagos....₩ ℔	5¼	@	05½

Mineral Oils.

Black, 29 gravity, 25 @ 30 cold test.....per gal	8	@	9
Black, 29 gravity, 15 cold test.....	8½	@	9¼
Black, 29 gravity, summer.	6	@	7
Cylinder, light, filtered.....	15	@	20
Cylinder, dark, filtered ...	14	@	20
Cylinder, dard, st'm refined	10	@	18
Paraffine, 23½ @ 24 gravity.	11	@	12
Paraffine, 25 gravity.....	10	@	11
Paraffine, 28 gravity	8½	@	9
Paraffine, red, 21 @ 22 gr'ty	14	@	14½
Paraffine, red, 22½@23 gr'ty	12	@	13

Paints and Colors.

Barytes, Prime White..... ₩ ton.	$22.00	@	22.50
Barytes, Amer. refined...	20.00	@	....
Barytes, Amer. No. 1....	18.00	@	....
Barytes, Amer. No. 2.....	16.00	@	....
Barytes, Amer., off-color.	13.00	@	15.00
Blue, Celestial..... ₩ ℔	5½	@	7¼
Blue, Chinese	45	@	50
Blue, Prussian.....	20	@	35
Blue, Ultramarine	7	@	25
Brown, Spanish	½	@	1
Brown, Vandyke, Amer.,	3	@	3½
Brown, Vandyke, English	6	@	8
Black, American Drop.....	8	@	10
Black, English Drop.....	12	@	14
Black, Frankfort, Drop....	5	@	18
Black, Lamp, common....	12	@	18
Black, Lamp, medium.....	19	@	25
Black, Lamp, prime.....	27	@	33
Carmine, No. 40, in bulk.	3.10	@	..
Carmine, No. 40, in boxes or barrels	3.20	@	..
Carmine, No. 40, in ounce bottles.....	4.20	@	..
Chalk, in bulk.... ₩ ton.	2.75	@	3.00
Chalk, in bbls..₩ 100 ℔	33	@	45
China Clay, English.... ₩ ton.	13.50	@	18.00
China Clay, Southern....	10.00	@	11.50
Cobalt Oxide, prep'd.....	2.90	@	....
Cobalt Oxide, black.. lots 100 ℔.	2.60	@	....
Cobalt, Oxide, black.. less 100 ℔.	2.65	@	....
Crocus Martus, Engl. ₩ ℔.	1½	@	2½
Crocus, American	1½	@	2½
Green, Paris, in bulk.....	12	@	12½
Green, Paris, 170 @ 175 ℔ kegs.....	12½	@	13
Green, Paris, small pack.	15	@	20
Green, Chrome, ordinary	8	@	11
Green, Chrome, extra....	12	@	13
Green, Chrome, pure....	22	@	25
Lead, White, dry in bbls		@	6¾
Lead, White, dry, in kegs.		@	7¼
Lead, White, in oil, keg lots 100 ℔.....		@	7¼
Lead, White, in oil, 25 ℔ tin pails.....		@	7¾
Lead, White, in oil, 12½ ℔ tin pails.....		@	8¼
Lead, White, in oil, 1 to 5 ℔ assorted tins.....		@	9¾
Lead, Red, pkgs. 500 ℔.....		@	7
Lead, Red, kegs.....		@	7¼
Litharge (pow'd), kegs.....		@	7¼

TERMS, &c.—Lead and Litharge.—On lots of 500 ℔ or over, 60 days' time or 2½ % discount for cash if paid within 15 days of date of invoice. Rebates, payable June 30 and December 31, if quantities specified are taken prior to those dates: To buyers of 3 tons and less than 10 tons, 4 %; 10 tons and less than 25 tons, 6 %; 25 tons and less than 50 tons, 8 %; 50 tons and upward, 10%.

Ocher, Rochelle.....	1.35	@	1½
Ocher, French Washed.....	1½	@	2½
Ocher, German Washed....	1½	@	3
Ocher, American.....	½	@	1¼
Orange Mineral, English..	8½	@	9½
Orange Mineral, French....	9	@	9½
Orange Mineral, German ..	8½	@	9½
Orange Mineral, American.	8	@	8½
Paris White, English Cliff-stone.....	1.00	@	1.10
Paris White, American.....	60	@	80
Red, Indian, English.....	5½	@	7
Red, Indian, American....	2	@	6
Red, Turkey.....	9	@	14
Red, Tuscan	9	@	11
Red, Venetian, American.. ₩ 100 ℔.	1.00	@	1.25
Red, Venetian, English....	1.00	@	1.50
Sienna, Italian, Burnt and Powd. ₩ ℔	5	@	6¼
Sienna, Ital., Burnt Lumps	1½	@	3½
Sienna, Ital., Raw, Powd..	5	@	6½
Sienna, Ital., Raw Lumps..	2	@	3½
Sienna, American, Raw....	1½	@	1¾
Sienna, American, Burnt and Powdered.....	1½	@	1¾
Talc, French	1½	@	1¾
Talc, American.....	½	@	1
Terra Alba, Fr'ch. ₩ 100 ℔	72½	@	80
Terra Alba, English	80	@	85
Terra Alba, American No.1	70	@	75
Terra Alba, American No. 2	38	@	40
Umber, Turkey, Bnt. and Powd., ... ₩ ℔	3½	@	4
Umber, Turkey, Bnt. Lmps.	2½	@	3
Umber, Turkey, Raw and Powdered.....	3½	@	4
Umber, Turkey, R'w Lmps	2½	@	2¾
Umber, Turkey, Ent. Amer.	1½	@	1¾
Umber, Turkey, R'w Amer.	1½	@	1¾
Yellow, Chrome.....	10	@	25
Vermilion, Americ. Lead..	11½	@	13
Vermilion, Quicks'er, bulk.	68	@	—
Vermilion, Quicks'er, bags.	69	@	—
Vermilion, Quicksilver, smaller pkgs.....	..	@	73
Vermilion, English Import	—	@	85
Vermilion, Imitation, Eng.	8	@	25
Vermilion, Trieste.....	75	@	77
Vermilion, Chinese.....	85	@	90
Whiting, Common. ₩ 100 ℔	40	@	45
Whiting, Gilders'.....	50	@	60
Zinc, American, dry.... ₩ ℔	3½	@	4¼
Zinc, French, Red Seal.....	..	@	7½
Zinc, French, Green Seal..	..	@	7½
Zinc, French, V. M. X....	6	@	8¼
Zinc, Antwerp, Red Seal...	..	@	6¾
Zinc, Antwerp, Green Seal	..	@	7½
Zinc, German, L. Z. O....	..	@	6¼
Zinc, V. M. in Poppy Oil, G. Seal, lots of 1 ton and over.....	10½	@	10¾
lots less than 1 ton	10½	@	11
Zinc, V. M. in Poppy Oil, Red Seal.....	..	@	..
lots of 1 ton and over....	9¼	@	10
Lots of less than 1 ton....	9¾	@	10¼

DISCOUNTS.—French Zinc.—Discounts to buyers of 10- bbl. lots of one or assorted grades. 1 %; 25 bbls. 2 %, 50 bbls, 4 %. No discount allowed on less than bbl. lots

Colors in Oil.

Blue, Chinese .....₩ ℔	35	@	40
Blue, Prussian.....	20	@	45
Blue, Ultramar.ine.....	12	@	18
Brown, Vandyke.....	7	@	12
Green, Chrome.....	8	@	13
Green, Paris.....	15	@	18
Sienna, Raw.....	7	@	13
Sienna, Burnt.....	7	@	13
Umber Raw.....	7	@	10
Umber, Burnt	7	@	10

Glue.

Low Grade.....₩ ℔	8	@	10
Cabinet.....	12	@	14
Medium White.....	13	@	15
Extra White.....	17	@	20
French.....	9	@	20
English.....	10	@	15
Irish.....	12	@	15

CURRENT METAL PRICES.

APRIL 2, 1890.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market reports

IRON AND STEEL.

Bar Iron from Store.

Common Iron :	
⅜ to 2 in. round and square.. 1 to 6 in. x ⅜ to 1 in.....	₩ lb 2 10 @ ....¢
Refined Iron :	
⅜ to 2 in. round and square.. 1 to 4 in. x ⅜ to 1½ in..... 4½ to 6 in. x ⅜ to 1 in.....	₩ lb 2.30 @ ....¢
1 to 6 in. x ¼ and 5-16	₩ lb 2.50 @ ....¢
Rods—⅝ and 11-16 round and sq..	₩ lb 2.40 @ ....¢
Bands—1 to 6 x 3-16 to No. 12.....	₩ lb 2.60 @ ....¢
"Burden Best" Iron, base price..	₩ lb 3.00 @ ....¢
Burden's "H. B. & S." Iron, base price.....	₩ lb 2 80 @ ....¢
"Ulster".....	₩ lb 3.10 @ ....¢
Norway Bars	4.00 @ ....¢
Norway Shapes	5.00 @ ....¢

Merchant Steel from Store.

	Per pound.
Open-Hearth and Bessemer Machinery, Toe Calk, Tire and Sleigh Shoe, base price in small lots.....	2¾¢
Best Cast Steel, base price in small lots	8 ¢
Best Cast Steel Machinery, base price in small lots.....	5¢

Sheet Iron from Store.

	Common American.	R. G.	Cleaned.
10 to 16.....	₩ lb 3.00 @ 3.00¢	3.50 @	¢
17 to 20.....	₩ lb 3.25 @ 3 25¢	3.50 @ 3.75	¢
21 to 24.....	₩ lb 3.35 @ 3.35¢	3.75 @	¢
25 and 26....	₩ lb 3 45 @	3.75 @	¢
27.....	₩ lb 3.55 @ 3.62½¢	4.00 @	¢
28.....	₩ lb 3.75 @ ....¢	4.25 @	¢
	B. B.		2d qual.
Galv'd, 14 to 20,	₩ lb. 5.00 @	4.75½ @	¢
Galv'd, 21 to 24,	₩ lb, 5.37½ @	5.12½ @	¢
Galv'd, 25 to 26,	₩ lb, 5.75 @	5.50 @	¢
Galv'd, 27.....	₩ lb, 6.12½ @	5.85½ @	¢
Galv'd, 28.....	₩ lb, 6.50 @	6.23 @	¢
Patent Planished.....	₩ lb A 10¢	B, 9¢	
Russia.....	₩ lb 9½¢ @ 10¢		
American Cold Rolled B. B.....	₩ lb 5¢ @ 7¢		
Craig Polished Sheet Steel.....	₩ lb, 8¼¢		

English Steel from Store.

Best Cast	₩ lb 15 ¢
Extra Cast	₩ lb 16½ @ 17 ¢
Swaged, Cast.....	₩ lb 16 ¢
Best Double Shear.....	₩ lb 15 ¢
Blister, 1st quality.....	₩ lb 12 ¢
German Steel, Best.....	₩ lb 10 ¢
2d quality.	₩ lb 9 ¢
3d quality	₩ lb 8 ¢
Sheet Cast Steel, 1st quality.....	₩ lb 15 ¢
2d quality.....	₩ lb 14 ¢
3d quality.....	₩ lb 12½¢

METALS.

Tin.

	Per lb
Banca, Pigs.....	23 ¢
Straits, Pigs.....	22½¢
English, Pigs.....	23 ¢
Straits in Bars...	23¾¢

Tin Plates.

	Charcoal Plates.—Bright.			Per box.
Melyn Grade.....	IC, 10 x 14..	@		$6.50
" "	... .IC, 12 x 12..	@		6.75
" "	. .. IC, 14 x 20..	@		6.50
" "	.....IC, 20 x 28..	@		13.00
" "	.... ..IX, 10 x 14..	@		8.00
" "	... ...IX, 12 x 12.. ...	@		8.25
" "	....IX, 14 x 20..	@		8.00
" "	.....IX, 20 x 28..	@		15.75
" "	.....DC, 12½ x 17.. ..	@		6.00
" "	.....DX, 12½ x 17..	@		7.50
Dalland Grade.....	IC, 10 x 14..	@		6.50
" "	.....IC, 12 x 12..	@		6.75
" "	.....IC, 14 x 20.. . .	@		6.40
" "	.....IX, 10 x 14.. . .	@		7.65
" "	. .....IX, 12 x 12..	@		7.90
" "	.....IX 14 x 20.	@		7.65
Allaway Grade.....	IC, 10 x 14.. ...	@		5.60
" "	.. ...IC, 12 x 12..	@		5.75
" "	.....IC, 14 x 20..	@		5.60
" "	.....IC, 20 x 28..	@		11.00
" "	.....IX, 10 x 14..	@		6.75
" "	. .....IX, 12 x 12..	@		6.90
" "	..... IX, 14 x 20..	@		6.75
" "	.....IX, 20 x 28..	@		13.50
" "	...DC, 12½ x 17.. ...	@		5.30
" "	. .DX, 12½ x 17.. 6 00	@		6.30
	Coke Plates.—Bright.			
Steel Coke.—IC, 10 x 14, 14 x 20..		@		$5.12½
10 x 20..		@		7.25
20 x 28.. ...		@		10.75
IX, 10 x 14, 14 x 20..		@		6.00
BV Grade.—IC, 10 x 14, 14 x 20..		@		4.87½
	Charcoal Plates.—Terne.			
Dean Grade.—IC, 14 x 20..		@		$5.10
20 x 28..... ...		@		10.25
IX, 14 x 20.....		@		5.90
20 x 28.....		@		11.80
Abecarne Grade.—IC, 14 x 20...		@		4.87½
20 x 28....		@		9.87½
IX, 14 x 20....		@		5.8
20 x 28...		@		11.60

Tin Boiler Plates.

XX, 14 x 28.....	112 sheets.....	$13.00 @ $13.00
XX, 14 x 28.....	112 sheets....	@ 13 25
XXX, 14 x 31.....	112 sheets	@ 14.75

Copper.

DUTY: Pig, Bar and Ingot, 4¢; Old Copper, 3¢ ₩ lb. Manufactured (including all articles of which Copper is a component of chief value), 45 % ad valorem.

Ingot.

Lake.....	@ 15 ¢
Baltimore Grade....	@ 13½¢

Sheet and Bolt.

Prices adopted by the Association of Copper Manufacturers of the United States, December 5, 1889, being quotations for all sized lots.

Not wider than	Not longer than	And longer than	Weights per square foot and prices per pound. Over 64 oz.	32 to 64 oz.	16 to 32 oz.	14 to 16 oz.	12 to 14 oz.	10 to 12 oz.	8 to 10 oz.	Less than 8 oz.
30	72		22	22	22	23	24	25	28	30
30	72		22	22	22	23	25	27	31	....
36	96		22	22	22	24	26	30	33	....
36	96		22	22	23	25	27	31	35	....
48	96		22	22	24	26	28	32	....	....
48	96		22	22	25	27	29	33	....	....
60	96		22	22	27	29	34	....	....	....
60	96		22	23	28	31	....	....	....	....
84	96		23	24	29	34	....	....	....	....
84	96		24	25	30	35	....	....	....	....
Over 84 in. wide			25	27	....	....	....	....	....	....

All Bath Tub Sheets.....	16 oz.	14 oz.	12 oz.	10 oz	
Per pound.....	$0.25	0.27	0 29	0.32	
Bolt Copper, ⅜ inch diameter and over, per pound.....					23¢

Circles, 60 inches in diameter and less, 3 cents per pound advance over lowest prices of Sheet Copper of the same thickness.

Circles, over 60 inches diameter, up to 96 inches diameter, inclusive, 5 cents per pound advance over lowest prices of Sheet Copper of the same thickness.

Circles, over 96 inches diameter, 6 cents per pound advance over lowest prices of Sheet Copper of the same thickness.

Segment and Pattern Sheets, 3 cents per pound advance over price of sheets required to cut them from.

Cold or Hard Rolled Copper, 14 ounces per square foot and heavier, 1 cent per pound over the foregoing prices.

Cold or Hard Rolled Copper, lighter than 14 ounces per square foot, 2 cents per pound over the foregoing prices.

Copper Bottoms, Pits and Flats.

	Per pound.
14 ounce to square foot and heavier.....	26¢
12 ounce and up to 14 ounce to square foot.....	27¢
10 ounce and up to 12 ounce.....	29¢

Circles less than 8 inches diameter 2 cents per pound additional.

Circles over 13 inches diameter are not classed as Copper Bottoms.

Tinning.

Tinning sheets on one side, 10, 12 and 14 x 48 each.....	8¢
Tinning sheets on one side, 30 x 60 each	30¢
For tinning boiler sizes, 9 in (sheets 14 in. x 60 in.), each.	15¢
For tinning boiler sizes, 8 in. (sheets 14 in. x 56 in.), each	12¢
For tinning boiler sizes, 7 in. (sheets 14 in. x 52 in.) each.....	12¢
Tinning sheets on one side, other sizes, per square foot.....	2½¢

For tinning both sides double the above prices.

Planished Brass and Copper.

14 x 48.

14 and 16 oz. and heavier..31¢.	By the case...30¢ ₩ lb
12 oz. and lighter.....33¢.	By the case...32¢ ₩ lb

24 x 48 and 30 x 60.

14 and 16 oz. and heavier..44¢.	12 oz.....37¢ ₩ lb

Seamless Brass and Copper Tubes.

O. G.	N. G.	⅜	½	⅝	¾	⅞	1	1¼
8-14	6-12	37	33	30	29	28	27	24
15	13	38	33	31	30	29	28	25
16	14	39	34	32	31	30	29	25
17	15	40	35	33	30	31	30	26
18	16	42	36	34	32	31	30	27
19	17	43	37	35	34	33	32	29
20	18-19	44	39	37	36	35	34	31
21	20	46	41	39	38	37	36	34
22	21	48	42	40	39	38	37	36
23	22	50	44	42	41	40	39	39
24	23	53	46	44	43	41	40	41
25	24	56	49	46	45	44	43	45

Copper, Bronze and Gilding Tube, 3¢ ₩ lb additional.

Brazed Brass Tubing. (To No. 20, inclusive.

Above 5-16 inch to 8 inch, inclusive	35¢
Plain, above 3 inch.....	45¢
Plain, 5-16 inch.....	45¢
Plain, ¼ inch.....	60¢
Plain, 3-16 inch.....	$1.00
Plain, ⅛ inch.....	1.50

Fancy Tubing, Brass, to No. 20, inclusive.....43¢ ₩ lb
Bronze Tubing, 3¢ ₩ lb more than Brass.
Discount from list..... .....25 @ ... %

Roll and Sheet Brass.

Discount from list..... .....35 %

High Brass Rods.

Over 1 inch diameter.....	27¢
¼ inch to 1 inch diameter, both inclusive.....	34¢
No. 8 and less than ¼ inch diameter.....	36¢
Smaller than No. 8.....	30¢

Hexagon, Octagon and Square, 2¢ ₩ lb advance over Round Rods.

Spelter.

Duty: Pig, Bars and Plates, $1.50 ₩ 100 lb.

Western Spelter	6¼¢
"Bertha"	9¢

Zinc.

Duty; Sheet, 2½¢ ₩ lb.

600 lb casks.....	6¼¢
Per lb	7¼¢

Lead.

Duty: Pig, $2 ₩ 100 lb. Old Lead, 2¢ ₩ lb. Pipe and Sheets, 3¢ ₩ lb.

American	4¼¢
Newark	4¼¢
Bar.....	4¼¢

Pipe, subject to trade discount..... 6 ¢
Tin-Lined Pipe, subject to trade discount..... .15¢
Block Tin Pipes, subject to trade discount..... 45¢
Sheet, subject to trade discount..... 6¼¢

Solder.

½ @ ½ (Guaranteed)...	14¾¢
Extra Wiping	12½¢

The prices of the many other qualities of Solder in the market indicated by private brands vary according to composition.

Antimony.

Cookson.....	₩ lb 23¢
Hallett's	" 22¢

ALUMINUM.

Prices in Ingots.

$2.00 ₩ lb in lots of 1000 lb and over.
$2.25 ₩ lb in lots of 500 lb and over.
$2.50 ₩ lb in lots of 100 lb and over.

Prices Per Pound on Rolled Sheets.

(Brown & Sharpe, Standard Gauge.)

Wider than... / And including...	2 in. 10 in.	10 in. 14 in.	14 in. 18 in.	18 in. 22 in.	22 in. 24 in.
Up to No. 20 inclusive...	$2.50	$2.60	$2.80	$3.00	$3.20
Nos. 21, 22, 23 and 24....	2.60	2.70	2.90	3 10	3.30
Nos. 25 and 26.....	2.70	2.80	3.00	3.20	3.40
Nos. 27 and 28.....	2.80	2.90	3.10	3.30	3.50

Sheets, thinner than No. 28 gauge and wider than 24 inches, special prices not less than $5 per pound.
Add 30 cents per pound for sheets cut to particular widths and lengths.
Sheets rolled to .001 in. and under, 50 cents per ounce.
Leaf in books, 20 cents per book; $2 per pack of 10 books, sheets 5 x 5 inches.

Aluminum Tubing.

From $4 per pound upward, according to size and thickness of walls.

Aluminum Castings.

From 50 cents upwards per pound extra over the cost of the metal in ingots, according to the number wanted, weight, the difficulty of casting, cost of patterns, &c.

Aluminum Wire in Coils.

(Brown & Sharpe, Standard Gauge.)

	Per lb
All numbers up to No. 14 (.064 in.) inclusive.....	$3.00
Nos. 15 (.05706 in.) to 22 (.0x534 in.) inclusive....	3.25
Nos. 23 (.02571 in.) and 24 (.0201 in.) inclusive...	3.50
Nos. 25 (.0179 in.) and 26 (.01594 in.) inclusive....	3.75
Nos. 27 (.014196 in.) and 28 (.012641 in.) inclusive	4.00
Nos. 29 (.011257 in.) and 30 (.010023 in.) inclusive	4.25
No. 31 (.008928 in.).....	4.50
No. 32 (.00795 in.).....	4.75
No. 33 (.00708 in.).....	5.00
No. 34 (.00630 in.).....	5.25
No. 35 (.00561 in.).....	5.75
No. 36 (.00500 in.).....	6.25
No. 37 (.00445 in.).....	7.00
No. 38 (.003965 in.).....	8.50
No. 39 (.003531 in.).....	12.00
No. 40 (.003144 in.).....	16.00

Spooling, on 1-pound spools, 15 cents per pound extra
Spooling, on 10-pound spools, 5 cents per pound extra